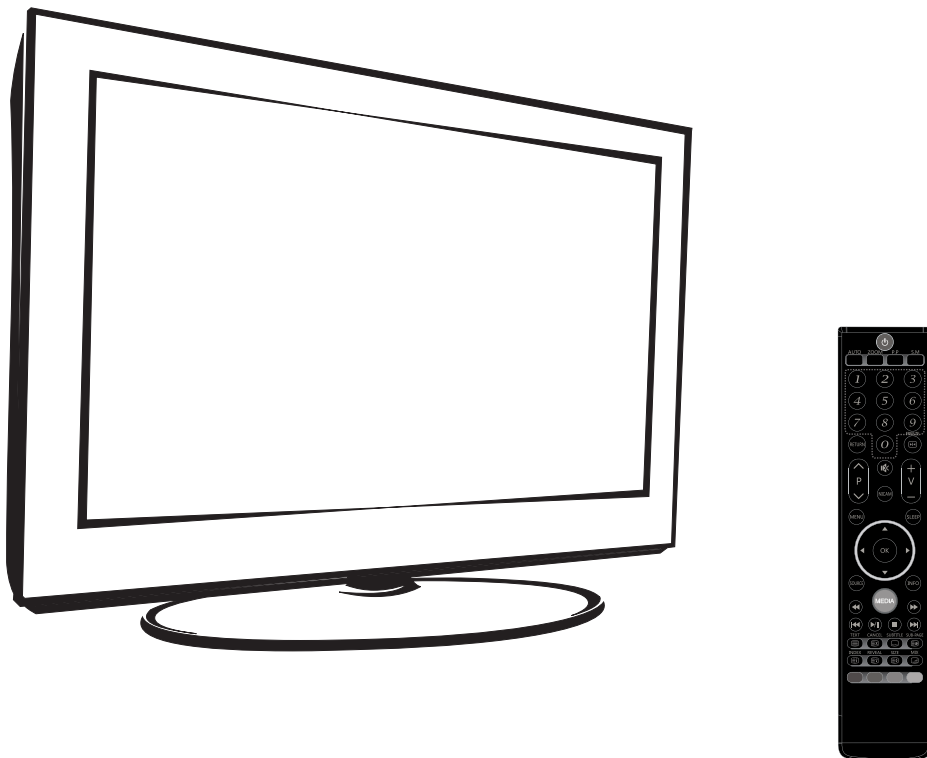


SERVICE MANUAL

8M48A CHASSIS



Design and specifications are subject to change without prior notice.
(Only Reference)

SIZE:A5

Description: SERVICE MANUAL 8M48A	
MODEL.	Brand Name: SKYWORTH
JOB NO.	
Engineering Dept:	
Artwork By:	Date: 2012-02-28
Checked By:	Date:
Approved By:	Date:

Content

Content-----	2
Technical Specification-----	3-9
Chassis Block Diagram-----	10
IC Block Diagram-----	11-17
Transistor Mark-----	18
Main PCB Top/Bottom Layer-----	19-20
Service Adjustments-----	21-29
Function Overview-----	30-47
Service Flow Chart-----	48-51
Circuit Diagrams-----	52-59

Technical Specification

1.Application Area:

This product standard is used for LED 8M26A chassis.

2.Specification:

All the standard are measured under following conditions without other specification.

2.1 Ambient Temperature:20+/-5°C

2.2 Relative Humidity:65+/-10%

2.3 Power Supply Voltage: Standard Input Voltage(100V~240Vac 50/60Hz)

2.4 Adjust after 20 minutes warm-up.

3.Test and check method:

3.1 Capability:According to nation test standard

3.2 Safety:_____ standard

EMC:_____ standard

Technical Specification

4.General Specification

No	Item	Specification	Remark
1.	Receiving and sending method	PAL SECAM / BG DK PAL / I NTSC / M	
2.	Receive Channel	VHF LOW K1~S6 VHF HIGH S7~S36 VHF S37~DS57	44.25MHz ~ 140.25MHz 147.25MHz ~ 423.25MHz 431.25MHz ~ 863.25MHz
3.	Input Voltage	100-240V ~ 50/60HZ	
4.	Market	Asia\Europe	
5.	Tuning System	PLL System	
6.	Operating Environment	1) Temp : 0 ~ 40 deg 2)Humidity : 40 ~ 85 %	
7.	Storage Environment	3)Temp : -20 ~ 50 deg 4)Humidity : ~ 90 %	

5.Feature and Function

No	Item	Specification	Remark
1.	CCD	NO	
2.	REMOCON	TOSHIBA CODE	
3.	AV Input	2REAR, 1SIDE	
4.	Component input	1 REAR	
5.	S-VIDEO	NO	
6.	RGB Input	YES	
7.	2 Carrier Stereo	NO	
8.	NICAM Stereo	YES	
9.	2 Carrier Dual	YES	
10.	NICAM Dual	YES	
11.	SSC (Split Screen) Mode	NO	
12.	MUP (Multi Picture Display) Mode	YES	
13.	Film Mode	NO	
14.	Noise Reduction	NO	
15.	Progressive Scan	YES	
16.	Motion Detection	NO	
17.	Dolby Virtual	NO	
18.	Swivel Speaker	NO	

Technical Specification

6. Safety and Regulation

No	Item	Min	Typ	Max	Unit	Remark
1.	Force Stability – Incline Plane Tip Test		10		deg	
2.	Force Stability – Level Tip Test		100		N	
3.	Isolation Gap, AC-AC/ AC-DC	3			mm	
4.	Isolation Gap	6			mm	
5.	Power Consumption, Max		40		W	For 22" LED
			55		W	For 24" LED
			80		W	For 32" LED
6.	Power Consumption, Stand by			1	W	
7.	Dielectric Voltage	3			kV	
8.	Isolation Resistance	4			M Ω	
9.	Leakage Current		5		mApp	
10.	Power Cord Captivity		40		N	
11.	Flammability – Back Cover		PASS			
12.	Sharp Edge		PASS			
13.	UL Compliance		NO			
14.	FCC Compliance		NO			
15.	CDRH Radiation Compliance		NO			
16.	CSA Compliance		NO			
17.	CEB Compliance		NO			
18.	CE Compliance		NO			
19.	CB Compliance		YES			

7. Video

No	Item	Min	Typ	Max	Unit	Remark
1.	Linearity Distortion, Vertical		1		%	
2.	Linearity Distortion, Horizontal		1		%	
3.	Trapezoidal Distortion, Vertical		1		%	
4.	Trapezoidal Distortion, Horizontal		1		%	
5.	Over Scan, Vertical	90	93	95	%	
6.	Over Scan, Horizontal	90	93	95	%	
7.	Video Noise Limited Sensitivity(@S/N=30db) VHF			51	dBV	
8.	Video Noise Limited Sensitivity(@S/N=30db) UHF			54	dBV	

Technical Specification

10.	Selectivity -1.5M	35			dB	
11.	Selectivity +8M	40			dB	
12.	Tuning Range	-0.7			MHz	

8. Chroma

No	Item	Min	Typ	Max	Unit	Remark
1.	White Balance, X axis		280			
2.	White Balance, Y axis		290			
3.	White Balance, Color Temperature	6500	9300	13000	kdeg	13000kdeg(268,273) 9300(281,311) 6500(313,329)
4.	Color Sensitivity		30		dB	
5.	Color Burst Lock-in Range	+/-300			Hz	
6.	Color Killer Sensitivity		30		dBu _v	

9. Audio

No	Item	Min	Typ	Max	Unit	Remark
1.	Audio Noise Limited Sensitivity, VHF-L		25		dBu _v	
2.	Audio Noise Limited Sensitivity, VHF-H		25		dBu _v	
3.	Audio Noise Limited Sensitivity, UHF		28		dBu _v	
4.	Buzz (S/N Ratio)		40		dB	
5.	Distortion		3		%	
6.	Audio Output, L/R, at 10% THD		5		W	
7.	Audio Output, Center		5		W	
8.	Stereo Separation		21		dB	
9.	Speaker Impedance		8		ohm	(24 inches is 4 ohm)
10.	Speaker Power Rating		5		W	(24 inches is 3W)

Technical Specification

10. Power

No	Item	Min	Typ	Max	Unit	Remark
1.	DC Voltage, Audio		12		V	
2.	DC Voltage, Tuner(5)		5		V	
3.	DC Voltage, Tuning(32)		33		V	

11. External Interface

No	Item	Min	Typ	Max	Unit	Remark
1.	Video Input Level		1		Vpp	75 OHM
2.	Video Input Frequency Response	4.5			MHz	
3.	Video Input S/N		40		dB	
4.	Audio Input Level		0.5		Vrms	
5.	Audio Input Frequency Response			15	kHz	
6.	Audio Input S/N		40		dB	
7.	Audio Input Distortion		3		%	
8.	Audio Input Dynamic Range			2	V	
9.	Video Output Level		1		Vpp	
10.	Video Output Frequency Response		4.2		MHz	
11.	Video Output S/N		50		dB	
12.	Audio Output Level		0.5		Vrms	
13.	Audio Output Frequency Response	80		12000	Hz	
14.	Audio Output S/N		40		dB	
15.	Audio Output Distortion		3		%	

Technical Specification

16.	Video Input Level, R/G/B		0.7		Vpp	
17.	Video Input Level, Component(Y, P _B , P _R)		0.7		Vpp	75 ohm
18.	RGB Input Horizontal Frequency		68		kHz	
19.	RGB Input Frame Rate		60		Hz	

12. The others

No	Item	Min	Typ	Max	Unit	Remark
1.	Search Sensitivity		40		dBuv	
2.	Clock, real time gain or loss (sec per day)		NO		sec	
3.	Soft Ware Functionality Test		YES			
4.	REMOCON Working Sensitivity, Straight		8		m	
5.	REMOCON Working Sensitivity, T/B/L/R		6		m	
6.	Closed Caption Sensitivity		46		dBuv	
7.	Teletext Sensitivity		46		dBm	
8.	Resonance of unit (Sweep freq : 50 ~ 1000)		NO			

13. Customer Menu Setup (as shipped condition)

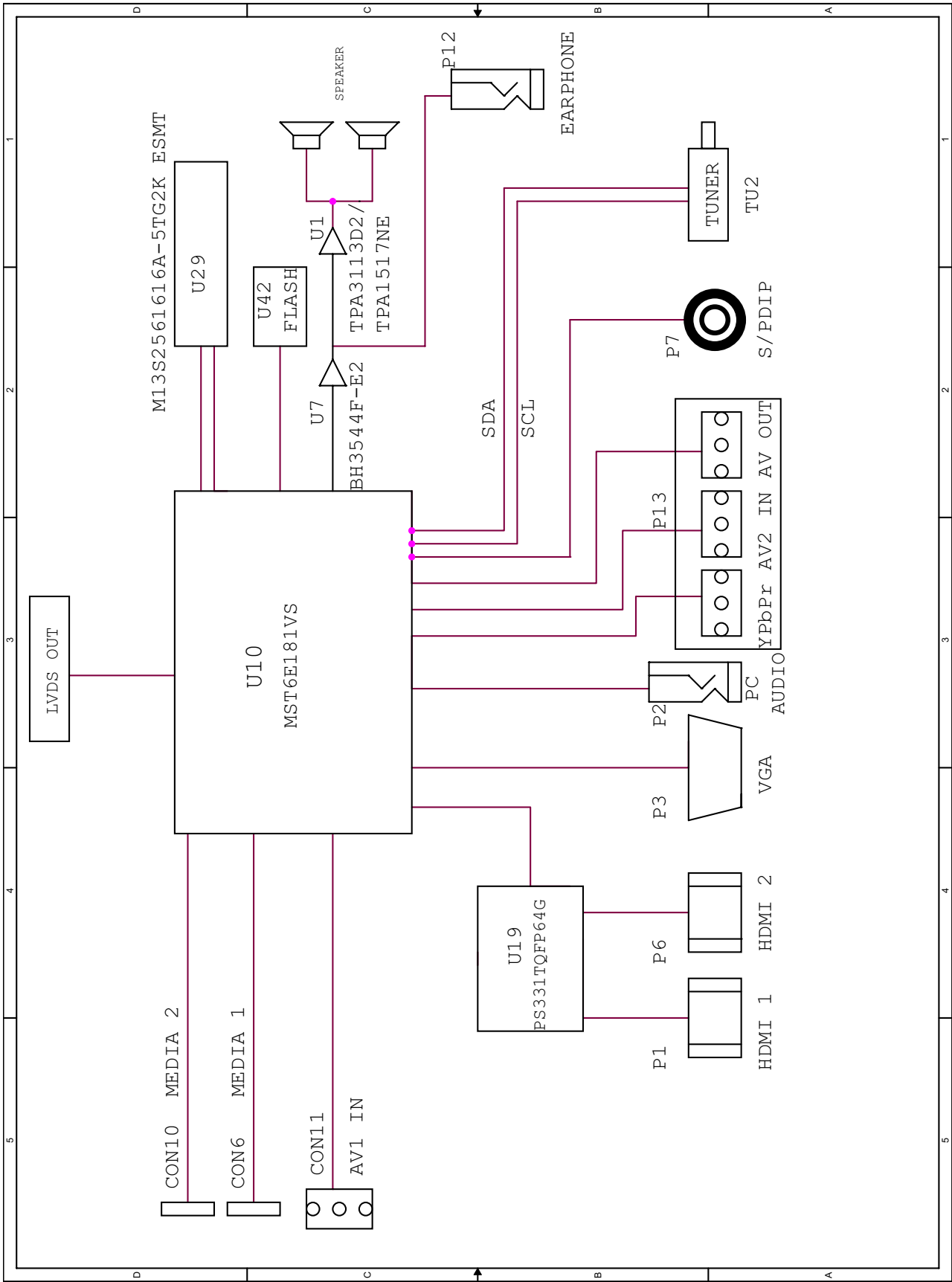
No	Item	Specification	Remark
1.	PSM	Standard	
2.	SSM	Standard	
3.	Volume	20	
4.	Mute	Off	
5.	Input Mode	RF	
6.	Customer Menu Language	Spanish	
7.	AVL	Off	
8.	Sleep Timer	Off	
9.	Auto Sleep	Off	
10.	Blue Back	Off	
11.	Surround	On	
12.	Caption	Off	
13.	Noise Reducer	Off	

Technical Specification

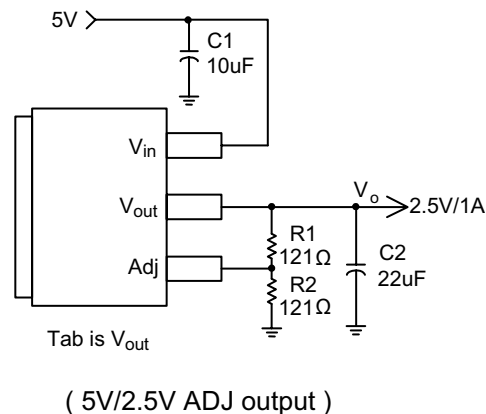
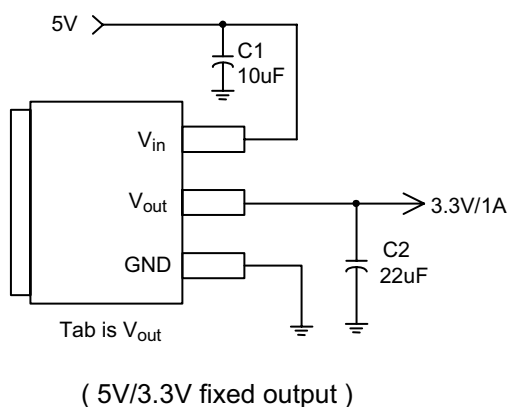
14. Reliability

No	Item	Min	Typ	Max	Unit	Remark
1.	ESD			4	kV	IEC-1000-4-2
2.	EFT/Burst			2	kV	IEC-1000-4-4
3.	Surge Immunity			4	kV	IEC-1000-4--5
4.	Voltage Dip Test, 10ms	0	40	70	%	IEC-1000-4-11
5.	Voltage Dip Test, 100ms	0	40	70	%	IEC-1000-4—11
6.	Operation Temperature	0		40	deg	
7.	Operation Humidity	40		85	%	
8.	Storage Temperature	-20		50	deg	
9.	MTBF (Confidence Level : 90 %)		30000		hour	

Chassis Block Diagram



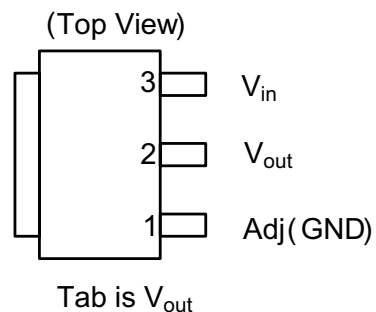
Typical Application Circuit



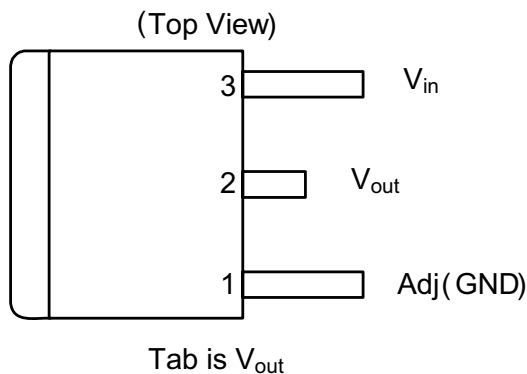
Note: $V_o = V_{REF} * (1 + \frac{R_2}{R_1})$

Connection Diagram

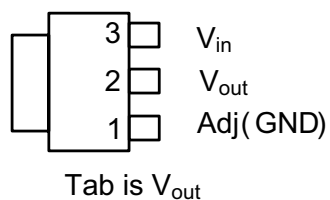
3 PIN SOT223



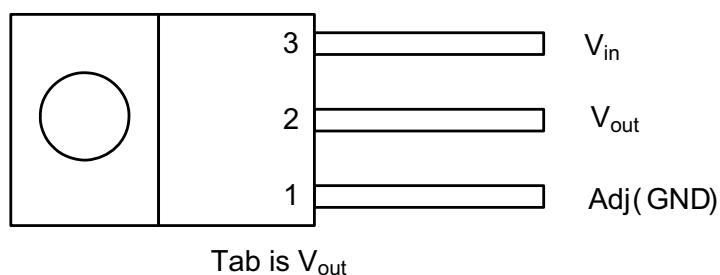
3 PIN TO252 / TO263



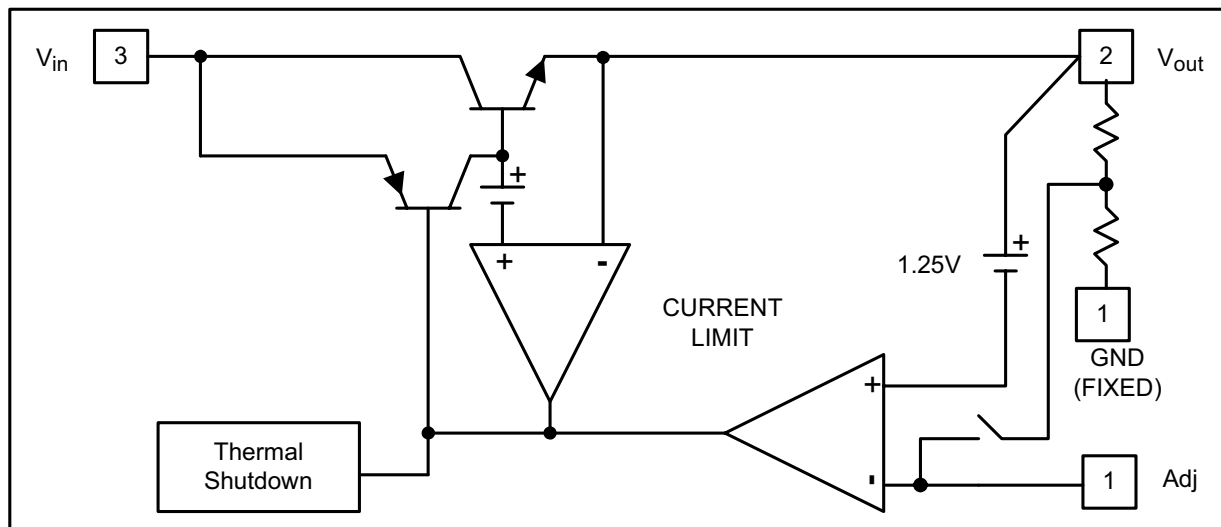
3 PIN SOT89



3 PIN TO220



Block Diagram



Pin Descriptions

NAME	I/O	PIN #	FUNCTION
Adj (GND)	I	1	A resistor divider from this pin to the V_{out} pin and ground sets the output voltage (Ground only for Fixed-Mode).
V_{out}	O	2	The output of the regulator. A minimum of 10 μ F capacitor ($0.15\Omega \leq ESR \leq 20\Omega$) must be connected from this pin to ground to insure stability.
V_{in}	I	3	The input pin of regulator. Typically a large storage capacitor ($0.15\Omega \leq ESR \leq 20\Omega$) is connected from this pin to ground to insure that the input voltage does not sag below the minimum dropout voltage during the load transient response. This pin must always be 1.3V higher than V_{out} in order for the device to regulate properly.

Pin Configurations

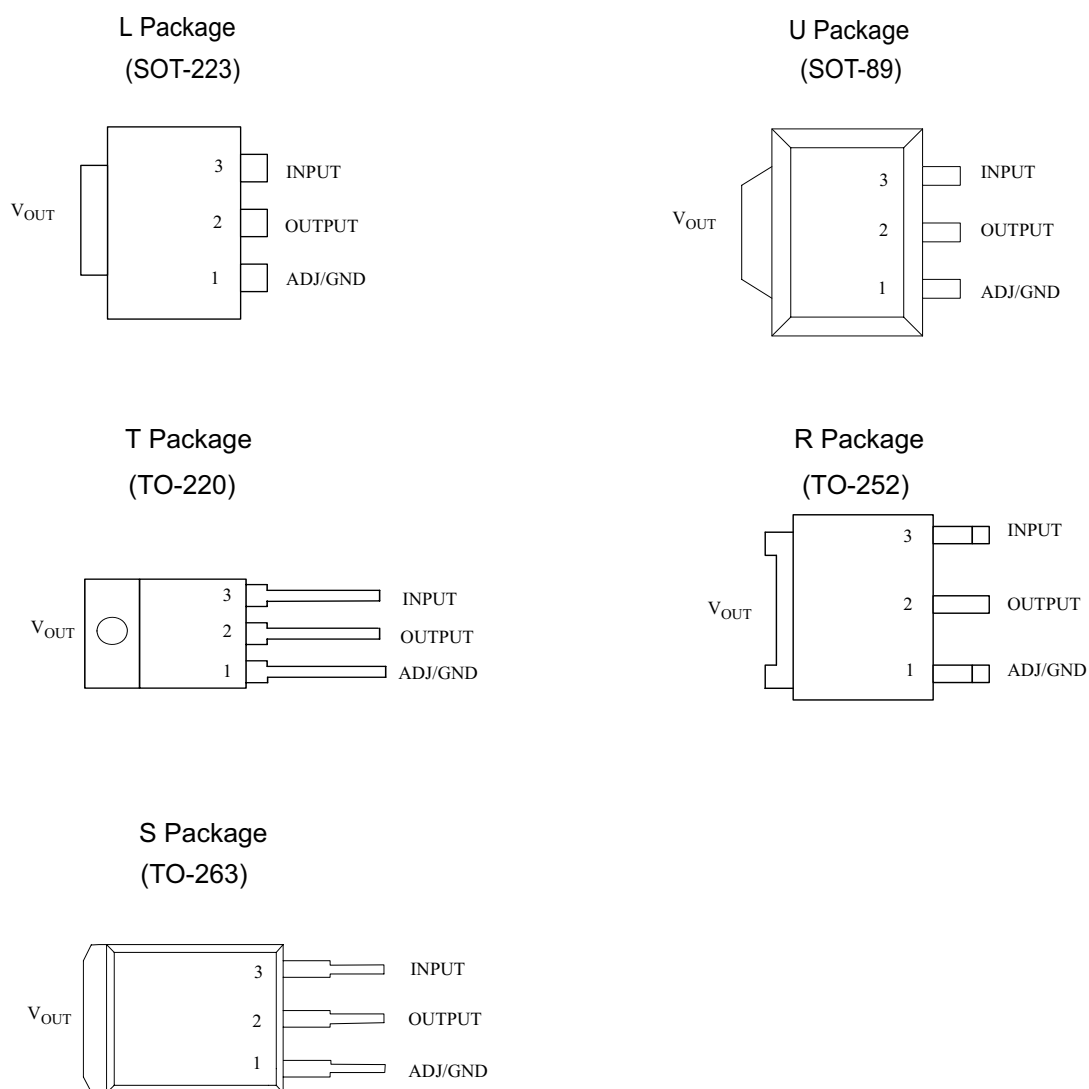


Figure 2. Pin Configurations of AS1117

Functional Block Diagram

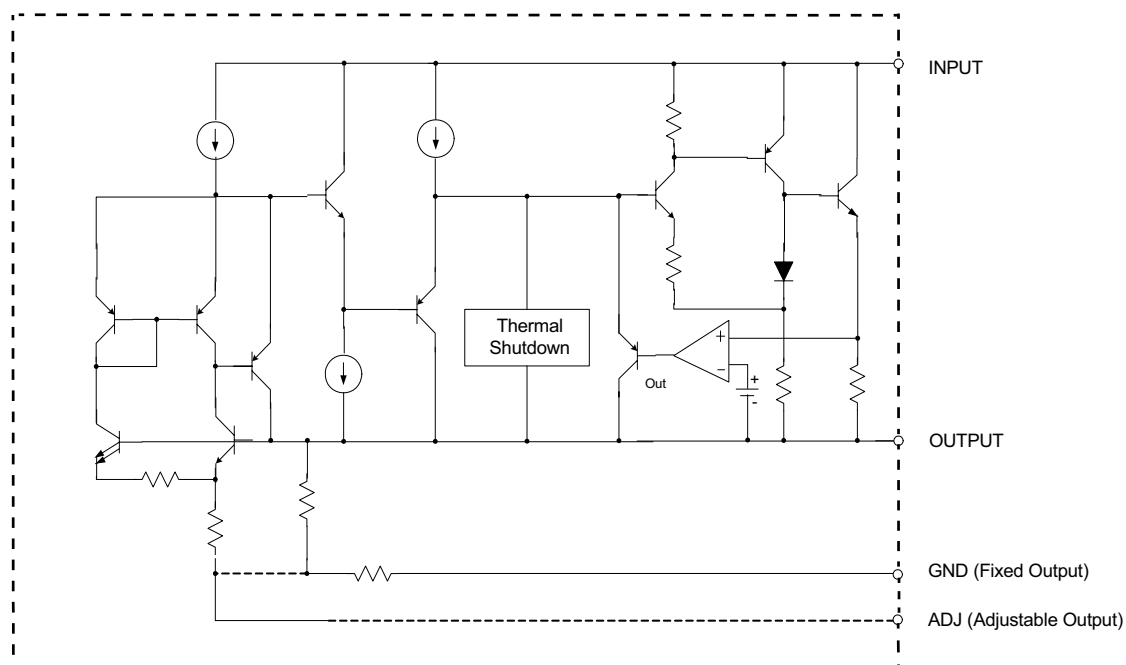


Figure 3. Functional Block Diagram of AS1117

General Description

The AOZ1051PI is a high efficiency, easy to use, 3 A synchronous buck regulator. The AOZ1051PI works from 4.5 V to 18 V input voltage range, and provides up to 3 A of continuous output current with an output voltage adjustable down to 0.8 V.

The AOZ1051PI comes in an exposed pad SO-8 package and is rated over a -40 °C to +85 °C operating ambient temperature range.

Features

- 4.5 V to 18 V operating input voltage range
- Synchronous Buck: 70 mΩ internal high-side switch and 40 mΩ internal low-side switch (at 12 V)
- Up to 95 % efficiency
- External soft start
- Output voltage adjustable to 0.8 V
- 3 A continuous output current
- 500 kHz PWM operation
- Cycle-by-cycle current limit
- Pre-bias start-up
- Short-circuit protection
- Thermal shutdown
- Exposed pad SO-8 package

Applications

- Point of load DC/DC converters
- LCD TV
- Set top boxes
- DVD and Blu-ray players/recorders
- Cable modems



Typical Application

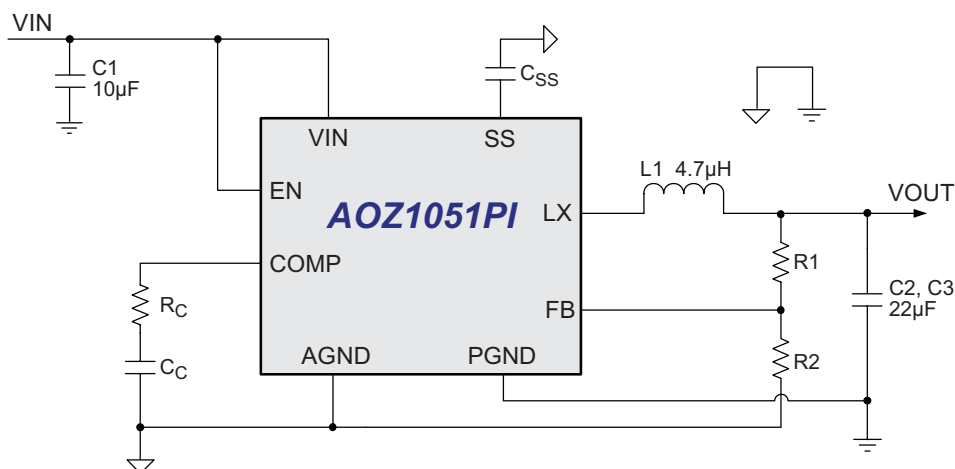


Figure 1. 3.3 V 3 A Synchronous Buck Regulator, $F_s = 500 \text{ kHz}$

Ordering Information

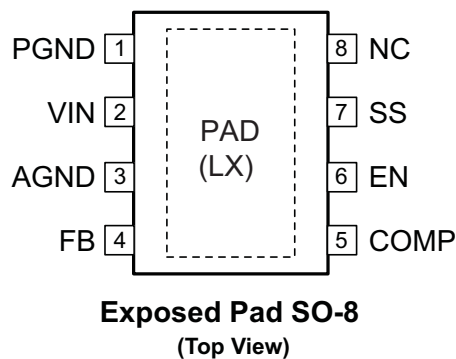
Part Number	Ambient Temperature Range	Package	Environmental
AOZ1051PI	-40 °C to +85 °C	EPAD SO-8	Green Product



AOS Green Products use reduced levels of Halogens, and are also RoHS compliant.

Please visit www.aosmd.com/web/quality/rohs_compliant.jsp for additional information.

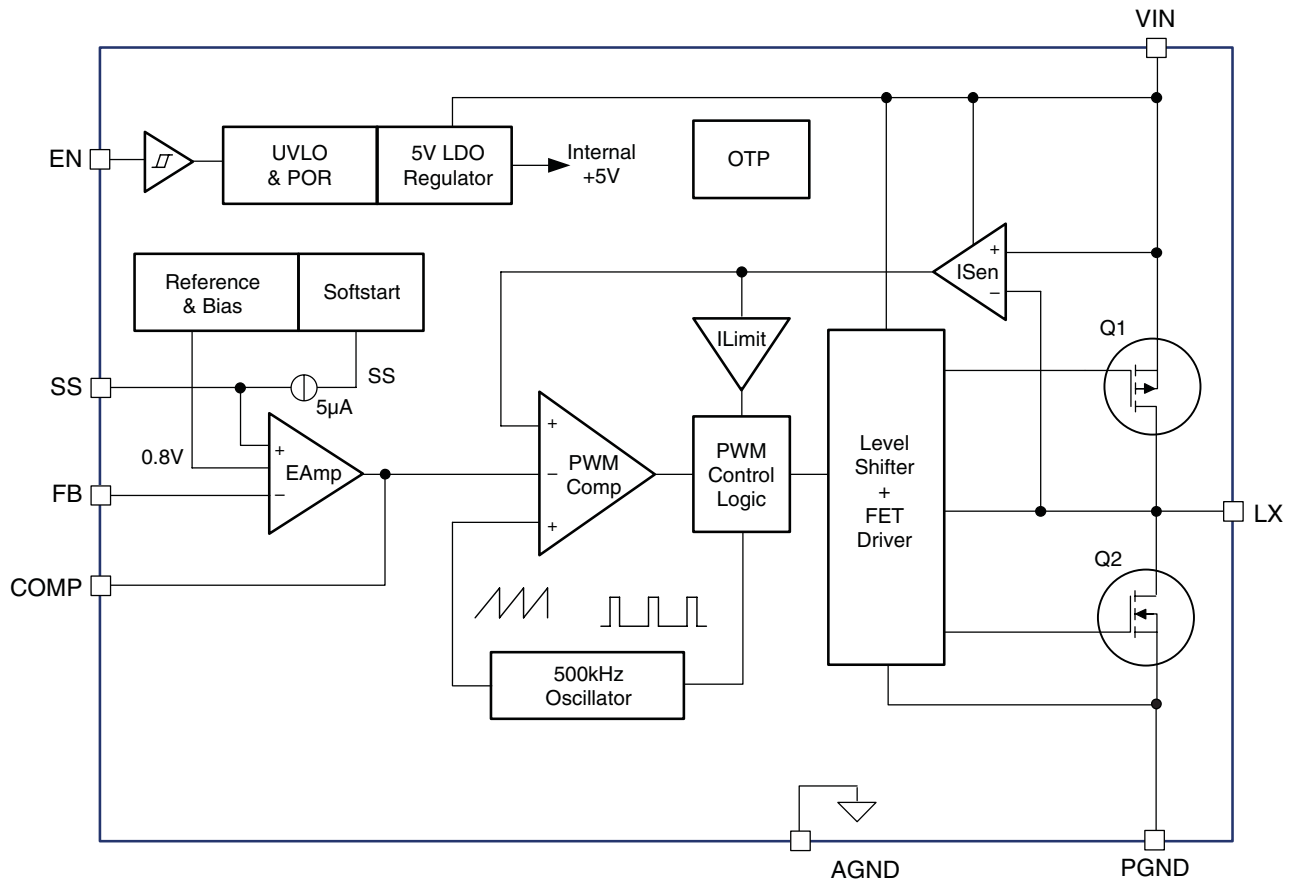
Pin Configuration



Pin Description

Pin Number	Pin Name	Pin Function
1	PGND	Power ground. PGND needs to be electrically connected to AGND.
2	VIN	Supply voltage input. When VIN rises above the UVLO threshold and EN is logic high, the device starts up.
3	AGND	Analog ground. AGND is the reference point for controller section. AGND needs to be electrically connected to PGND.
4	FB	Feedback input. The FB pin is used to set the output voltage via a resistive voltage divider between the output and AGND.
5	COMP	External loop compensation pin. Connect a RC network between COMP and AGND to compensate the control loop.
6	EN	Enable pin. Pull EN to logic high to enable the device. Pull EN to logic low to disable the device. If on/off control is not needed, connect EN to VIN and do not leave it open.
7	SS	Soft-start pin. 5 μ A current charging current.
8	NC	No Connect Pin. Pin 8 is not internally connected. Connect this pin externally to LX and use it for better thermal performance.
Exposed pad	LX	Switching node. LX is the drain of the internal PFET. LX is used as the thermal pad of the power stage.

Block Diagram



Absolute Maximum Ratings

Exceeding the Absolute Maximum Ratings may damage the device.

Parameter	Rating
Supply Voltage (V_{IN})	20 V
LX to AGND	-0.7 V to $V_{IN} + 0.3$ V
LX to AGND (20 ns)	-5 V to 22 V
EN to AGND	-0.3 V to $V_{IN} + 0.3$ V
FB, SS, COMP to AGND	-0.3 V to 6.0 V
PGND to AGND	-0.3 V to +0.3 V
Junction Temperature (T_J)	+150 °C
Storage Temperature (T_S)	-65 °C to +150 °C
ESD Rating ⁽¹⁾	2.0 kV

Note:

1. Devices are inherently ESD sensitive, handling precautions are required. Human body model rating: 1.5 k Ω in series with 100 pF.

Recommended Operating Conditions

The device is not guaranteed to operate beyond the Maximum Recommended Operating Conditions.

Parameter	Rating
Supply Voltage (V_{IN})	4.5 V to 18 V
Output Voltage Range	0.8 V to $0.85 \cdot V_{IN}$
Ambient Temperature (T_A)	-40 °C to +85 °C
Package Thermal Resistance Exposed Pad SO-8 (θ_{JA}) ⁽²⁾	50 °C/W

Note:

2. The value of θ_{JA} is measured with the device mounted on a 1-in² FR-4 board with 2 oz. Copper, in a still air environment with $T_A = 25$ °C. The value in any given application depends on the user's specific board design.



SY8086

High Efficiency 1.4MHz, 1A Synchronous Step Down Regulator Preliminary Specification

General Description

The SY8086 is a high-efficiency 1.4MHz synchronous step-down DC-DC regulator ICs capable of delivering up to 1A output current. The SY8086 operates over a wide input voltage range from 2.5V to 5.5V and integrate main switch and synchronous switch with very low $R_{DS(ON)}$ to minimize the conduction loss.

Low output voltage ripple and small external inductor and capacitor sizes are achieved with 1.4MHz switching frequency. This along with small SOT-23 footprint provides small PCB area application.

Ordering Information

SY8086□(□□)□
 □ Temperature Code
 □ Package Code
 □ Optional Spec Code

Temperature Range: -40° C to 85° C

Ordering Number	Package type	Note
SY8086AAC	SOT23-5	1A

Features

- Low $R_{DS(ON)}$ for internal switches (top/bottom): 250mΩ /200mΩ
- 2.5-5.5V input voltage range
- 1.4MHz switching frequency minimizes the external components
- Internal softstart limits the inrush current
- RoHS Compliant and Halogen Free
- Compact package: SOT23 5 pin

Applications

- Portable Navigation Device
- Smart phone
- USB Dongle
- Set Top Box
- Media Player

Typical Applications

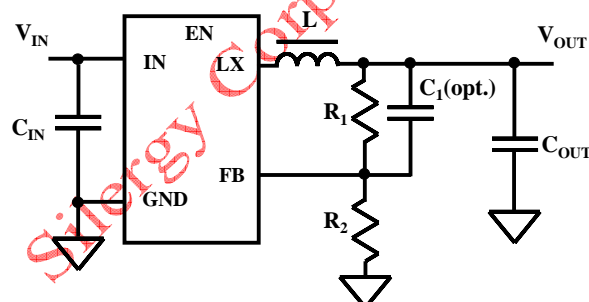


Figure 1. Schematic Diagram

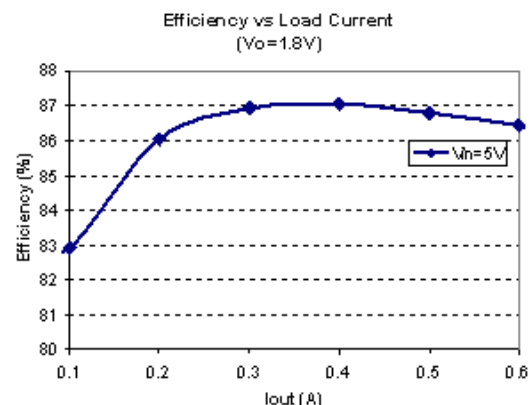
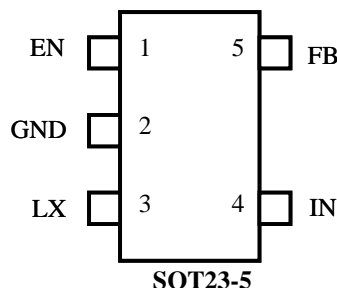


Figure2 Efficiency vs Load Current

Pinout (top view)



SOT23-5

Top mark: **BE**xyz (Device code: BE, x=year code, y=week code, z=lot number code)

Pin Name	Pin Number	Pin Description
EN	1	Enable control. Pull high to turn on. Do not float.
GND	2	Ground pin
LX	3	Inductor pin. Connect this pin to the switching node of inductor
IN	4	Input pin. Decouple this pin to GND pin with at least 1uF ceramic cap
FB	5	Output Feedback Pin. Connect this pin to the center point of the output resistor divider (as shown in Figure 1) to program the output voltage: $V_{out}=0.6*(1+R_1/R_2)$

Absolute Maximum Ratings (Note 1)

Supply Input Voltage	6.0V
Enable, FB Voltage	$V_{IN} + 0.6V$
Power Dissipation, P_D @ $T_A = 25^\circ C$ SOT-23-5	0.4W
Package Thermal Resistance (Note 2)	
SOT23-5, θ_{JA}	250°C/W
SOT23-5, θ_{JC}	130°C/W
Junction Temperature Range	150°C
Lead Temperature (Soldering, 10 sec.)	260°C
Storage Temperature Range	-65°C to 150°C
ESD Susceptibility (Note 2)	
HBM (Human Body Mode)	2kV
MM (Machine Mode)	200V

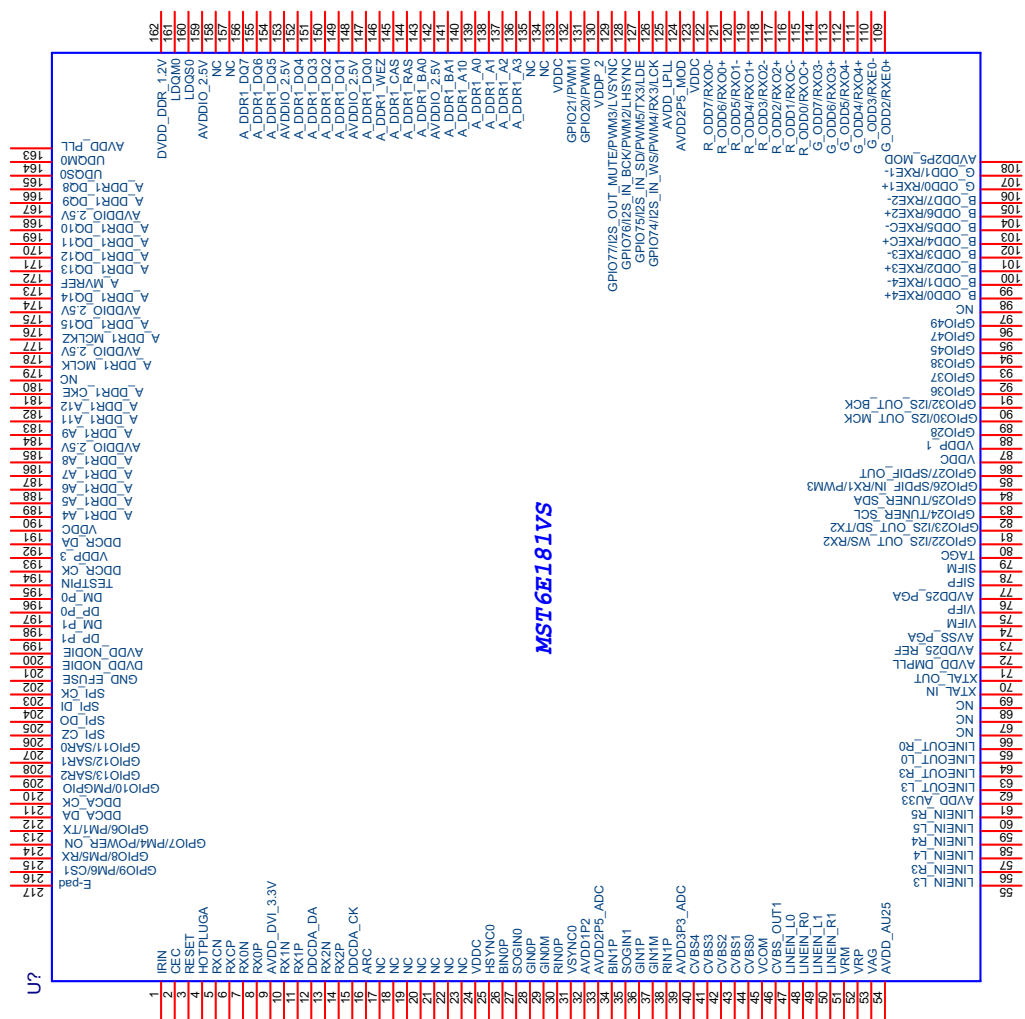
Recommended Operating Conditions (Note 3)

Supply Input Voltage	2.5V to 5.5V
Junction Temperature Range	-40°C to 125°C
Ambient Temperature Range	-40°C to 85°C

IC Block Diagram

U10(LCDTV CONTROLLER WITH VIDEO ECODE)MST6E181VS

PIN DIAGRAM (MST6E181VS)



Attention Please: Under the technology license agreement between MStar and Dolby/SRS/BBE/DivX/Microsoft/QSound, MStar is obliged not to provide samples that incorporate Dolby/SRS/BBE/DivX/Microsoft/QSound technology to any third party who is not a qualified licensee of Dolby/SRS/BBE/DivX/Microsoft/QSound respectively.

FEATURES

MST6M182VG, a single chip Multimedia TV SoC that supports TV channel decoding, and media-centre functionality enabled by a high performance AV CODEC and CPU

Key features includes,

1. Analog TV Front-End Demodulator
2. A Multi-Standard A/V Format Decoder
3. The MStarACE-5 Video Processor
4. Home Theater Sound Processor
5. Peripheral and Power Management

■ High Performance Micro-processor

- High speed/performance 32-bit RISC CPU
- Two full duplex UARTs
- Supports USB and ISP programming

- DMA Engine

■ MPEG-2 Video Decoder

- ISO/IEC 13818-2 MPEG-2 video MP@HL
- Automatic frame rate conversion
- Supports resolution up to HDTV (1080i, 720p) and SDTV

■ MPEG-4 Video Decoder

- ISO/IEC 14496-2 MPEG-4 ASP video decoding
- Supports resolutions up to HDTV (1080p@30fps)
- Supports DivX¹ Home Theater & HD profiles^{Optional}

■ RealMedia Decoder

- Supports maximum resolution up to 1080p@30fps
- Supports RV8, RV9, RV10, RA8-LBR and HE-AAC decoders
- Supports file formats with RM and RMVB
- Supports Picture Re-sampling
- Supports in-loop de-block for B-frame

■ Hardware JPEG

- Supports sequential mode, single scan
- Supports both color and grayscale pictures
- Following the file header scan the hardware decoder fully handles the decode process
- Supports programmable Region of Interest (ROI)
- Supports formats: 422/411/420/444/422T
- Supports scaling down ratios: 1/2, 1/4, 1/8
- Supports picture rotation

■ NTSC/PAL/SECAM Video Decoder

- Supports NTSC-M, NTSC-J, NTSC-4.43, PAL (B, D, G, H, M, N, I, Nc), and SECAM standards
- Automatic standard detection
- Motion adaptive 3D comb filter
- Three configurable CVBS & Y/C S-video inputs
- Supports Closed Caption (analog CC 608/ analog CC 708/digital CC 608/digital CC 708), V-chip and SCTE

■ Multi-Standard TV Sound Processor

- SIF audio decoding
- Supports BTSC/A2/EIA-J demodulation
- Supports FM/AM demodulation
- Supports MTS Mode Mono/Stereo/SAP in BTSC/EIA-J mode
- Supports Mono/Stereo/Dual in A2 mode
- Built-in audio sampling rate conversion (SRC)
- Audio processing for loudspeaker channel, including volume, balance, mute, tone, EQ, virtual stereo/surround and treble/bass controls
- Advanced sound processing options available, for example: Dolby², SRS³, BBE⁴, QSound⁵
- Supports digital audio format decoding:
 - MPEG-1, MPEG-2 (Layer I/II), MP3, Dolby Digital (AC-3) ^{Optional}, AAC-LC, WMA
 - Dolby Digital Plus ^{Optional}

¹ Trademark of DivX, Inc.

^{Optional} Please see Ordering Guide for details.

² Trademark of Dolby Laboratories

³ Trademark of SRS Labs, Inc.

⁴ Registered trademark of BBE Sound, Inc.

⁵ Registered trademark of QSound Labs, Inc.

■ Audio Interface

- Four L/R audio line-inputs
- Two L/R outputs for main speakers and additional line-outputs
- I2S digital audio input & output
- S/PDIF digital audio output
- HDMI audio channel processing
- Programmable delay for audio/video synchronization

■ Analog RGB Compliant Input Ports

- Two analog ports support up to 1080P
- Supports PC RGB input up to SXGA@75Hz
- Supports HDTV RGB/YPbPr/YCbCr
- Supports Composite Sync and SOG Sync-on-Green
- Automatic color calibration
- AV-link support

■ Analogue RGB Auto-Configuration & Detection

- Auto input signal format and mode detection
- Auto-tuning function including phasing, positioning, offset, gain, and jitter detection
- Sync Detection for H/V Sync

■ DVI/HDCP/HDMI Compliant Input Port

- One HDMI/DVI Input port
- HDMI 1.3/1.4 Compliant
- HDCP 1.2 Compliant
- 225MHz @ 1080P 60Hz input with 12-bit Deep-color support
- Supports CEC
- Supports HDMI 3D format input
- Supports HDMI 4Kx2K input
- Supports HDMI ARC
- Single link DVI 1.0 compliant
- Robust receiver with excellent long-cable support

■ MStar Advanced Color Engine (MStarACE-5)

- Fully programmable multi-function scaling engine
 - Nonlinear video scaling supports various modes including Panorama
 - Supports dynamic scaling for RM, VC-1
- Advanced video processing engine
 - 3D video deinterlacer with edge and artifact smoother
 - Edge-oriented deinterlacer with edge and artifact smoother
 - Automatic 3:2/2:2/M:N pull-down detection and recovery
 - 3D noise reduction for lousy air/cable input
 - Motion adaptive SNR
 - Arbitrary frame rate conversion
- MStar Professional Picture Enhancement:
 - Dynamic brilliant and fresh color
 - Dynamic *Blue Stretch*
 - Intensified contrast and details
 - Dynamic *Vivid Skin*
 - Dynamic sharpened Luma/Chroma edges
 - Global and local dynamic depth of field perception
 - Accurate and independent color control
 - Supports sRGB and xvYCC color processing
 - Supports HDMI 1.3 deep color format
- Programmable 12-bit RGB gamma CLUT

■ Output Interface

- Single/dual link 8/10-bit Mini-LVDS output
- Supports panel resolution up to Full-HD (1920x1080) @ 60Hz
- Programmable TCON control signals generation
- Supports TH/TI format
- Supports dithering options to 6/8-bit output
- Spread spectrum output for EMI suppression
- Supports 60Hz 3D passive panel (Line alternative mode)

■ CVBS Video Outputs

- Supports CVBS bypass output

■ 3D-like Graphics Engine

- Hardware Graphics Engine for responsive interactive applications
- Supports point draw, line draw, rectangle draw/fill, text draw and trapezoid draw
- BitBlt, stretch BitBlt, trapezoid BitBlt, mirror BitBlt and rotate BitBlt
- Supports alpha and destination alpha compare
- Raster Operation (ROP)
- Support Porter-Duff

■ VIF Demodulator

- Compliant with NTSC M/N, PAL B, G/H, I, D/K, SECAM L/L' standards
- Digital low IF architecture
- Audio/Video dual-path processor
- Stepped-gain PGA with 25 dB tuning range and 1 dB tuning resolution
- Maximum IF gain of 37 dB
- Programmable TOP to accommodate different tuner gain and SAW filter insertion loss to optimize noise and linearity performance
- Multi-standard processing with single SAW or sawless
- Supports silicon tuner low IF output architecture

■ Connectivity

- Two USB 2.0 host ports
- USB architecture designed for efficient support of external storage devices in conjunction with off air broadcasting

■ Miscellaneous

- Bootable SPI interface with serial flash support
- Power control module in standby mode
- 13.5x13.5 BGA package
- Operating Voltages: 1.26V (core), 1.8V (DDR2), 2.5V and 3.3V (I/O and analog)

GENERAL DESCRIPTION

The MST6M182VG is MStar's most up-to-date system-on-chip solution for flat panel integrated digital television products. Building on the success of MStar's preceding SOC series, the MST6M182VG provides most cost-effective solution for multimedia TV application with creative and attractive features exclusively presented by MStar.

The MST6M182VG integrates TV/multi-media all-purpose AV decoder, VIF demodulator, and advanced Sound/Video processor into a single device. This allows the overall BOM to be reduced significantly making the MST6M182VG a very competitive multi-media TV solution.

The powerful multimedia A/V decoder inside MST6M182VG is hosted with a dedicated hardware video codec engine to secure fast and stable video stream playback, an audio application specific DSP for digital audio format decoding and advanced sound effects, and a high performance RISC CPU to manipulate all possible user playback and control activities. With extendable USB 2.0 connectivity, an MST6M182VG based system can be switched to a high quality media-center in a simple manner.

For standard users, the MST6M182VG provides multi-standard analog TV support with adaptive 3D video decoding and VBI data extraction. The build-in audio decoder is capable of decoding FM, AM, A2, BTSC and EIA-J sound standards. The MST6M182VG supplies all the necessary A/V inputs and outputs to complete a receiver design including a HDMI receiver and component video ADC. All input selection multiplexed for video and audio are integrated, including full SCART support with CVBS output. The equipped MStar MStarACE-5 color engine is the latest masterpiece of MStar famous color engine series providing excellent video and picture quality in Full-HD and large-scale displaying system.

To meet the increasingly popular energy legislative requirements without the use of additional hardware, the MST6M182VG has an ultra low power standby mode.

ELECTRICAL SPECIFICATIONS

Analog Interface Characteristics

Parameter	Min	Typ	Max	Unit
VIDEO ADC Resolution		10		Bits
DC ACCURACY				
Differential Nonlinearity		TBD		LSB
Integral Nonlinearity		TBD		LSB
VIDEO ANALOG INPUT				
Input Voltage Range				
Minimum		0.5		V p-p
Maximum		TBD		V p-p
Input Bias Current			1	uA
SWITCHING PERFORMANCE				
Maximum Conversion Rate	170			MSPS
Minimum Conversion Rate			12	MSPS
HSYNC Input Frequency	15		200	kHz
PLL Clock Rate	12		170	MHz
PLL Jitter		TBD		ps p-p
Sampling Phase Tempco		TBD		ps/°C
DIGITAL INPUTS				
Input Voltage, High (V_{IH})	2.5			V
Input Voltage, Low (V_{IL})			0.8	V
Input Current, High (I_{IH})			-1.0	uA
Input Current, Low (I_{IL})			1.0	uA
Input Capacitance		5		pF
DIGITAL OUTPUTS				
Output Voltage, High (V_{OH})	VDDP-0.1			V
Output Voltage, Low (V_{OL})			0.1	V
VIDEO ANALOG OUTPUT				
CVBS Buffer Output				
Output Low		0.2		V
Output High		1.2		V
AUDIO				
ADC Input		2.8		V p-p
DAC Output		2.8		V p-p
SIF Input Range			0.1	V p-p
Minimum				V p-p
Maximum	1.0			V p-p

Parameter	Min	Typ	Max	Unit
SAR ADC Input	0		3.3	V
FB ADC Input*	0		1.2	V

Specifications subject to change without notice.

Note: Input full scale is 1.2V, but input range is 0 ~ 3.3V.

Recommended Operating Power Conditions

Parameter	Symbol	Min	Typ	Max	Units
3.3V Supply Voltages	V _{VDD_33}	3.14		3.46	V
1.8V Supply Voltages	V _{VDD_18}	1.70		1.90	V
1.26V Supply Voltages	V _{VDD_126}	1.20		1.32	V

Absolute Maximum Ratings

Parameter	Symbol	Min	Max	Units
3.3V Supply Voltages	V _{VDD_33}		3.6	V
1.8V Supply Voltages	V _{VDD_18}		1.98	V
1.26V Supply Voltages	V _{VDD_126}		1.32	V
Input Voltage (5V tolerant inputs)	V _{IN5Vtol}		5.0	V
Input Voltage (non 5V tolerant inputs)	V _{IN}		V _{VDD_33}	V
Ambient Operating Temperature	T _A	0	70	°C
Storage Temperature	T _{STG}	-40	150	°C
Junction Temperature	T _J		150	°C

Note: Stresses above those listed in Absolute Maximum Ratings may cause permanent damage to the device. This is a stress rating only and does not imply functional operation of the device. Exposure to absolute maximum ratings for extended periods may affect device reliability.

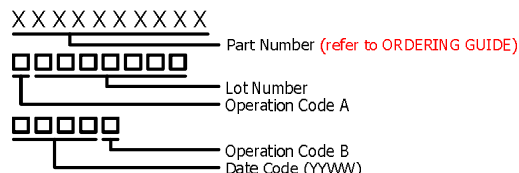
ORDERING GUIDE



Part Number	Temperature Range	Package Description	Package Option
MST6M182VG-LF	0°C to +70°C	BGA	200
MST6M182VG-LF-XX	0°C to +70°C	BGA	200

Note:

XX suffix represents advanced features. Please contact MStar sales for details.

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Electrostatic charges accumulate on both test equipment and human body and can discharge without detection. MST6M182VG comes with ESD protection circuitry; however, the device may be permanently damaged when subjected to high energy discharges. The device should be handled with proper ESD precautions to prevent malfunction and performance degradation.

REVISION HISTORY

Document	Description	Date
MST6M182VG_pb_v01	• Initial release	Aug 2011
MST6M182VG_pb_v02	• Updated Features	Aug 2011

PIN DIAGRAM (MST6M181VG/MST6M182VG)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
A		RXCKP	RXCKN		NC	NC			HWRESET	GPIO7	GPIO6	GND	USB1_DM	USB0_DP	USB0_DM		A
B	RX1N	RX0P	RX0N	NC	NC	NC	NC		IRIN	GPIO8	SAR0	PWM0	USB1_DP	DDCR_CK	SCZ	SDO	B
C	RX2N	RX2P	RX1P	NC	NC	NC	NC		GPIO9	SAR2	SAR1	PWM1	GND	DDCR_DA	SCK	SDI	C
D	DDCD_CK	ARC	DDCD_D A	HOTPLUG A	NC	CEC	BYPASS		AVDD_D DR	DDCA_CK	DDCA_DA	GPIO10	GND	LEDON	HCON	DPM	D
E		SOGIN0	BIN0P	HSYNCO									AVDD_D DR	SCAN_BL K	POL	GOE/ GCLK2	E
F	RIN0P	GIN0M	GIN0P	VSYNCO									GND	SCAN_BL K1	WPWM	OPT_P	F
G	GND	GND	GND					AVDD_D DR					GND	SAR3	OPT_N	GCLK4	G
H		SOGIN1	BIN1P	AVDD_AL VE		AVDD_25	AVDD_12 6	DVDD_D DR	GND	GND	GND			GSP/ VST	SOE	FLK3	H
J	RIN1P	GIN1M	GIN1P	AVDD_13	AVDD_ME MPLL	AVDD_AU 25	VDDC	VDDC	GND	GND	GND			GSP_R/ GCLK1	GSC/ GCLK3	FLK	J
K	CVBS2	CVBS1	NC	AVDD_D MPLL	AVDD_M OD	AVDD_RE F	VDDC	VDDC	GND	GND	GND		MVREF	VGH_OD D	GCLK5	VGH_EVE N	K
L	CVBS0	VCOM	AUVAG	AUVRP	AVDD_M OD	VDDP	VDDC	VDDC						FLK2	GCLK6	RLV2P	L
M	CVBSOUT	AUL0	AUL3	GND	AVDD_AU 33	VDDP				AVDD_D DR	AVDD_D DR			RLVCKM	RLVCKP	RLV2M	M
N	AUR0	AUL1	AUR3	AUOUTL1	AVDD_PG A	GND		NC	NC	RLV1M	RLV1P	RLV0M	RLV0P	RLV3M	RLV3P		N
P	AUR1	AUL2	AUOUTR1	GND	PGA_COM	GND	GND	I2S_OUT _SD	SPDIFI	LLV5M	LLV4M	LLV3P	LLV2M	LLV1M	RLV4M	RLV4P	P
R	AUR2	AUOUTL0	XOUT	GND	GND	VIFM	GND	I2S_OUT _MCK	I2S_OUT _BCK	LLV5P	LLV4P	LLVCKP	LLV2P	LLV1P	RLV5M	RLV5P	R
T		AUOUTR0	XIN	TAGC	GND	VIFP	GND	I2S_OUT _WS	SPDIFO		LLV3M	LLVCKM		LLV0M	LLV0P		T
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	

PIN DESCRIPTION

Analog Interface

Pin Name	Pin Type	Function	Pin
HSYNC0	Schmitt Trigger Input w/ 5V-tolerant	HSYNC / Composite Sync for VGA Input from channel 0	E4
VSYNC0	Schmitt Trigger Input w/ 5V-tolerant	VSYNC for VGA Input from channel 0	F4
BIN0P	Analog Input	Analog Blue Input from Channel 0	E3
SOGIN0	Analog Input	Sync On Green Input from Channel 0	E2
GIN0P	Analog Input	Analog Green Input from Channel 0	F3
GIN0M	Analog Input	Reference Ground for Analog Green Input from Channel 0	F2
RIN0P	Analog Input	Analog Red Input from Channel 0	F1
BIN1P	Analog Input	Analog Blue Input from Channel 1	H3
SOGIN1	Analog Input	Sync On Green Input from Channel 1	H2
GIN1P	Analog Input	Analog Green Input from Channel 1	J3
GIN1M	Analog Input	Reference Ground for Analog Green Input from Channel 1	J2
RIN1P	Analog Input	Analog Red Input from Channel 1	J1

Analog Video Input/Output Interface

Pin Name	Pin Type	Function	Pin
CVBS2	Analog Input	CVBS (Composite) Video Input Channel 2	K1
CVBS1	Analog Input	CVBS (Composite) Video Input Channel 1	K2
CVBS0	Analog Input	CVBS (Composite) Video Input Channel 0	L1
VCOM	Analog Input	CVBS Input Reference Ground	L2
CVBSOUT	Analog Output	CVBS (Composite) Video Output Channel	M1

Analog Audio Input/Output Interface

Pin Name	Pin Type	Function	Pin
I2S_OUT_WS	I/O w/ 5V-tolerant	Word Select Output; 4mA driving strength / Universal Asynchronous Receiver 2 (UART2_RX)	T8
I2S_OUT_SD	I/O w/ 5V-tolerant	Audio Serial Data Output; 4mA driving strength / Universal Asynchronous Transmitter 2 (UART2_TX)	P8
SPDIFI	Input w/ 5V-tolerant	S/PDIF Audio Input / Pulse Width Modulation Output; 4mA driving strength (PWM3)	P9
SPDIFO	Output	S/PDIF Audio Output; 4mA driving strength	T9

Pin Name	Pin Type	Function	Pin
I2S_OUT_MCK	Output w/ 5V-tolerant	Audio Master Clock Output	R8
I2S_OUT_BCK	Output w/ 5V-tolerant	Audio Bit Clock Output	R9
AUL0	Analog Input	Audio Line Input Left Channel 0	M2
AUR0	Analog Input	Audio Line Input Right Channel 0	N1
AUL1	Analog Input	Audio Line Input Left Channel 1	N2
AUR1	Analog Input	Audio Line Input Right Channel 1	P1
AUL2	Analog Input	Audio Line Input Left Channel 2	P2
AUR2	Analog Input	Audio Line Input Right Channel 2	R1
AUL3	Analog Input	Audio Line Input Left Channel 3	M3
AUR3	Analog Input	Audio Line Input Right Channel 3	N3
AUVRP	Analog Output	Positive Reference Voltage for Audio ADC	L4
AUVAG	Analog Output	Reference Voltage for Audio Common Mode	L3
AUOUTL1	Analog Output	Main Audio Output Left Channel 1	N4
AUOUTR1	Analog Output	Main Audio Output Right Channel 1	P3
AUOUTL0	Analog Output	Main Audio Output Left Channel 0	R2
AUOUTR0	Analog Output	Main Audio Output Right Channel 0	T2

Mini-LVDS Interface

Pin Name	Pin Type	Function	Pin
LLV5M	Output	Mini-LVDS L-Link Channel 5 Negative Data Output	P10
LLV5P	Output	Mini-LVDS L-Link Channel 5 Positive Data Output	R10
LLV4M	Output	Mini-LVDS L-Link Channel 4 Negative Data Output	P11
LLV4P	Output	Mini-LVDS L-Link Channel 4 Positive Data Output	R11
LLV3M	Output	Mini-LVDS L-Link Channel 3 Negative Data Output	T11
LLV3P	Output	Mini-LVDS L-Link Channel 3 Positive Data Output	P12
LLV2M	Output	Mini-LVDS L-Link Channel 2 Negative Data Output	P13
LLV2P	Output	Mini-LVDS L-Link Channel 2 Positive Data Output	R13
LLV1M	Output	Mini-LVDS L-Link Channel 1 Negative Data Output	P14
LLV1P	Output	Mini-LVDS L-Link Channel 1 Positive Data Output	R14
LLV0M	Output	Mini-LVDS L-Link Channel 0 Negative Data Output	T14
LLV0P	Output	Mini-LVDS L-Link Channel 0 Positive Data Output	T15
LLVCKM	Output	Mini-LVDS L-Link Negative Clock Output	T12
LLVCKP	Output	Mini-LVDS L-Link Positive Clock Output	R12
RLV5M	Output	Mini-LVDS R-Link Channel 5 Negative Data Output	R15
RLV5P	Output	Mini-LVDS R-Link Channel 5 Positive Data Output	R16

Pin Name	Pin Type	Function	Pin
RLV4M	Output	Mini-LVDS R-Link Channel 4 Negative Data Output	P15
RLV4P	Output	Mini-LVDS R-Link Channel 4 Positive Data Output	P16
RLV3M	Output	Mini-LVDS R-Link Channel 3 Negative Data Output	N14
RLV3P	Output	Mini-LVDS R-Link Channel 3 Positive Data Output	N15
RLV2M	Output	Mini-LVDS R-Link Channel 2 Negative Data Output	M16
RLV2P	Output	Mini-LVDS R-Link Channel 2 Positive Data Output	L16
RLV1M	Output	Mini-LVDS R-Link Channel 1 Negative Data Output	N10
RLV1P	Output	Mini-LVDS R-Link Channel 1 Positive Data Output	N11
RLV0M	Output	Mini-LVDS R-Link Channel 0 Negative Data Output	N12
RLV0P	Output	Mini-LVDS R-Link Channel 0 Positive Data Output	N13
RLVCKM	Output	Mini-LVDS R-Link Negative Clock Output	M14
RLVCKP	Output	Mini-LVDS R-Link Positive Clock Output	M15

TCON Interface

Pin Name	Pin Type	Function	Pin
POL	Output	Polarity Control Single	E15
SOE	Output	Source Output Enable	H15
GSP/ VST	Output	Gate Start Pulse for LTD Panel / Vertical start pulse for GIP Panel	H14
GCLK6	Output	Gate Clock for GIP Panel	L15
GCLK5	Output	Gate Clock for GIP Panel	K15
GCLK4	Output	Gate Clock for GIP Panel	G16
GSC/ GCLK3	Output	Gate Shift Clock for LTD Panel / Gate Clock for GIP Panel	J15
GOE/ GCLK2	Output	Gate Clock for GIP Panel / Gate Output Enable for LTD Panel	E16
GSP_R/ GCLK1	Output	Right Gate Start Pulse for LTD Panel / Gate Clock for GIP Panel	J14
SCAN_BLK1	Output	Scan Backlight Control Signal 1	F14
SCAN_BLK	Output	Scan Backlight Control Signal	E14
OPT_N	Output	The Output Pin to Indicate Reverse State	G15
OPT_P	Output	The Output Pin to Indicate Reverse State	F16
FLK3	Output	Gate Modulation Signal	H16
FLK2	Output	Gate Modulation Signal	L14
FLK	Output	Gate Modulation Signal	J16

Pin Name	Pin Type	Function	Pin
WPWM	Output	PWM Output for Wavy Noise	F15
HCON	Output	H Inversion Control Signal on DPC	D15
DPM	Output	Power Sequence Control Signal	D16
LEDON	Output	LED On	D14
VGH_ODD	Output	VGH Odd for GIP Panel	K14
VGH_EVEN	Output	VGH Even for GIP Pane	K16

DVI/HDMI Interface

Pin Name	Pin Type	Function	Pin
RXCKN	DVI/HDMI Input	Negative DVI/HDMI Input for A Link Clock Channel	A3
RXCKP	DVI/HDMI Input	Positive DVI/HDMI Input for A Link Clock Channel	A2
RX0N	DVI/HDMI Input	Negative DVI/HDMI Input for A Link Data Channel 0	B3
RX0P	DVI/HDMI Input	Positive DVI/HDMI Input for A Link Data Channel 0	B2
RX1N	DVI/HDMI Input	Negative DVI/HDMI Input for A Link Data Channel 1	B1
RX1P	DVI/HDMI Input	Positive DVI/HDMI Input for A Link Data Channel 1	C3
RX2N	DVI/HDMI Input	Negative DVI/HDMI Input for A Link Data Channel 2	C1
RX2P	DVI/HDMI Input	Positive DVI/HDMI Input for A Link Data Channel 2	C2
ARC	DVI/HDMI Output	Audio Return Channel	D2

Serial Flash Interface

Pin Name	Pin Type	Function	Pin
SCK	Output	SPI Flash Serial Clock	C15
SDI	Output	SPI Flash Serial Data Input	C16
SDO	Input w/ 5V-tolerant	SPI Flash Serial Data Output	B16
SCZ	Output	SPI Flash Chip Select	B15
IRIN	Input w/ 5V-tolerant	IR Receiver Input	B9

GPIO Interface

Pin Name	Pin Type	Function	Pin
GPIO10	I/O w/ 5V-tolerant	General Purpose Input/Output; 4mA driving strength	D12
GPIO9	I/O w/ 5V-tolerant	General Purpose Input/Output; 4mA driving strength	C9
GPIO8	I/O w/ 5V-tolerant	General Purpose Input/Output / Universal Asynchronous Receiver 0 (UART0_RX)	B10
GPIO7	I/O w/ 5V-tolerant	General Purpose Input/Output; 4mA driving strength For Power Management Only	A10

Pin Name	Pin Type	Function	Pin
GPIO6	I/O w/ 5V-tolerant	General Purpose Input/Output / Word Select Output; 4mA driving strength (I2S_OUT_WS) / Universal Asynchronous Transmitter 0 (UART0_TX)	A11
PWM1	Output w/ 5V-tolerant	Pulse Width Modulation Output; 4mA driving strength	C12
PWM0	Output w/ 5V-tolerant	Pulse Width Modulation Output; 4mA driving strength	B12
SAR3	Analog Input	SAR Low Speed ADC Input 3	G14
SAR2	Analog Input	SAR Low Speed ADC Input 2	C10
SAR1	Analog Input	SAR Low Speed ADC Input 1	C11
SAR0	Analog Input	SAR Low Speed ADC Input 0	B11

USB Interface

Pin Name	Pin Type	Function	Pin
USB0_DP	Analog I/O	USB Non Inverting Data Input/Output for Port 0	A14
USB0_DM	Analog I/O	USB Inverting Data Input/Output for Port 0	A15
USB1_DP	Analog I/O	USB Non Inverting Data Input/Output for Port 1	B13
USB1_DM	Analog I/O	USB Inverting Data Input/Output for Port 1	A13

VIF Interface

Pin Name	Pin Type	Function	Pin
VIFM	Analog Input	Negative Video IF Input	R6
VIFP	Analog Input	Positive Video IF Input	T6
TAGC	Analog Output	Tuner Automatic Gain Control Output	T4
PGA_COM	Analog Input	VIF PGA Negative Source	P5

Misc. Interface

Pin Name	Pin Type	Function	Pin
HWRESET	Schmitt Trigger Input w/ 5V-tolerant	Hardware Reset; active high	A9
DDCD_DA	I/O w/ 5V-tolerant	HDCP Serial Bus Data / DDC Data of DVI/HDMI	D3
DDCD_CK	Input w/ 5V-tolerant	HDCP Serial Bus Clock / DDC Clock of DVI/HDMI	D1
DDCR_DA	I/O w/ 5V-tolerant	DDC Data for ROM	C14
DDCR_CK	Input w/ 5V-tolerant	DDC Clock for ROM	B14
HOTPLUGA	I/O w/ 5V-tolerant	Hot-plug control for DVI/HDMI	D4
DDCA_DA	I/O w/ 5V-tolerant	DDC Data for Analog port	D11
DDCA_CK	I/O w/ 5V-tolerant	DDC Clock for Analog port	D10

Pin Name	Pin Type	Function	Pin
XIN	Crystal Oscillator Input	Crystal Oscillator Input	T3
XOUT	Crystal Oscillator Output	Crystal Oscillator Output	R3
BYPASS		For External Bypass Capacitor	D7
CEC	I/O	Consumer Electronics Control	D6
MVREF	Input	Reference Voltage for DDR SDRAM Interface	K13

Power Pins

Pin Name	Pin Type	Function	Pin
AVDD_33	3.3V Power	Analog 3.3V Power	J4
AVDD_25	2.5V Power	Analog 2.5V Power	H6
AVDD_126	1.26V Power	Analog 1.26V Power	H7
AVDD_AU25	2.5V Power	Audio 2.5V Power	J6
AVDD_AU33	3.3V Power	Audio 3.3V Power	M5
AVDD_DMPLL	3.3V Power	Crystal Power	K4
AVDD_REF	2.5V Power	Demod ADC Power	K6
AVDD_PGA	2.5V Power	Demod PGA Power	N5
AVDD_MOD	3.3V Power	MOD Power	K5, L5
AVDD_MEMPLL	3.3V Power	PLL Power	J5
AVDD_DDR	1.8V Power	DDR Power	D9, E13, G8, M10, M11
DVDD_DDR	1.26V Power	DDR 1.26V Power	H8
AVDD_ALIVE	3.3V Power	Alive Domain IO Power	H4
VDDC	1.26V Power	Digital Core Power	J7, J8, K7, K8, L7, L8
VDDP	3.3V Power	Digital Input/Output Power	L6, M6
GND	Ground	Ground	A12, C13, D13, F13, G1-G3, G13, H9-H11, J9-J11, K9-K11, M4, N6, P4, P6, P7, R4, R5, R7, T5, T7

No Connects

Pin Name	Pin Type	Function	Pin
NC		No connect	A5, A6, B4-B7, C4-C7, D5, K3, N8, N9

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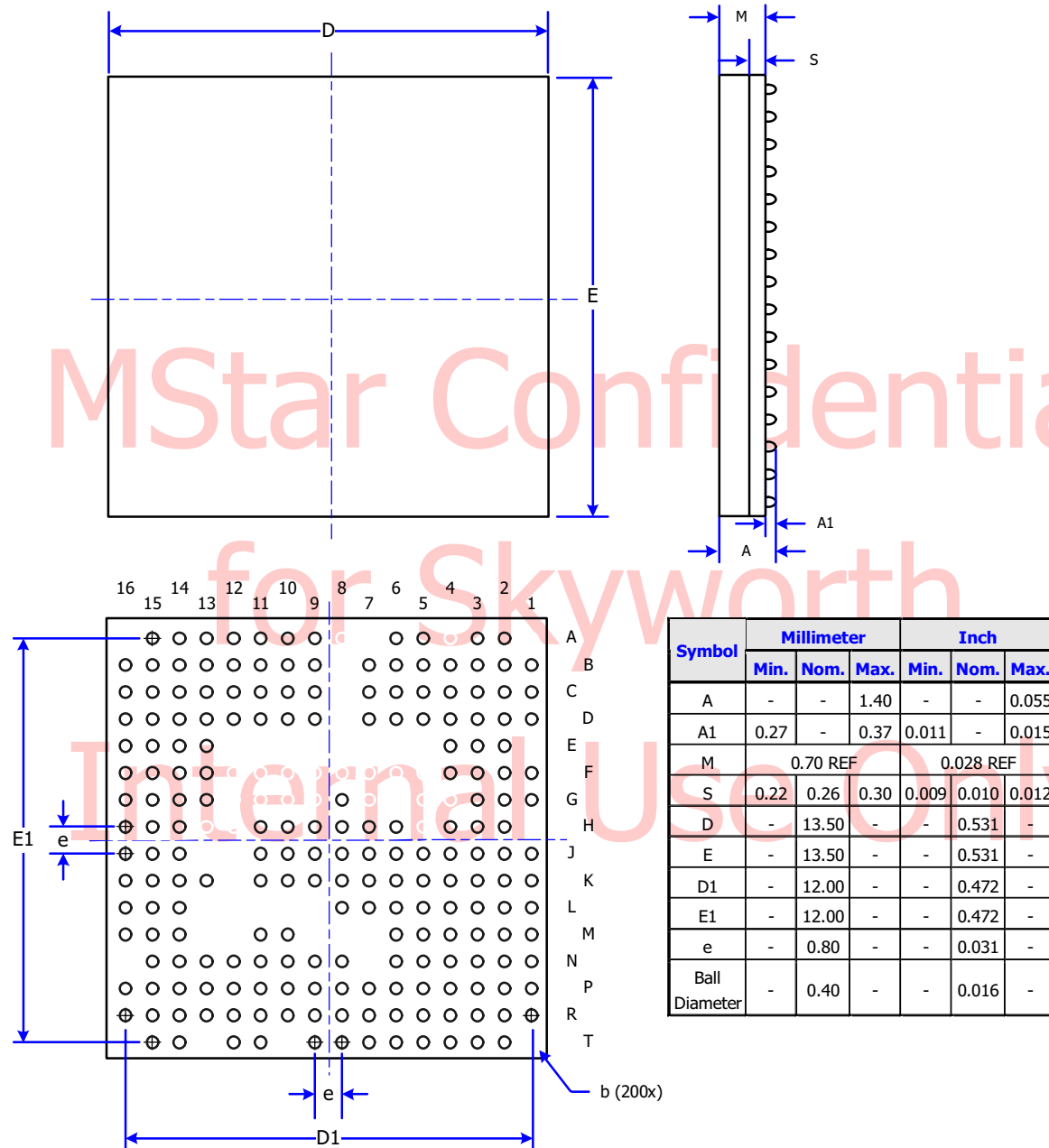
Electrostatic charges accumulate on both test equipment and human body and can discharge without detection. MST6M181VG/MST6M182VG comes with ESD protection circuitry; however, the device may be permanently damaged when subjected to high energy discharges. The device should be handled with proper ESD precautions to prevent malfunction and performance degradation.

REVISION HISTORY

Document	Description	Date
MST6M181VG/MST6M182VG_pin_v01	• Initial release	Aug 2011
MST6M181VG/MST6M182VG_pin_v02	• Added Ball Diameter to Mechanical Dimensions	Aug 2011

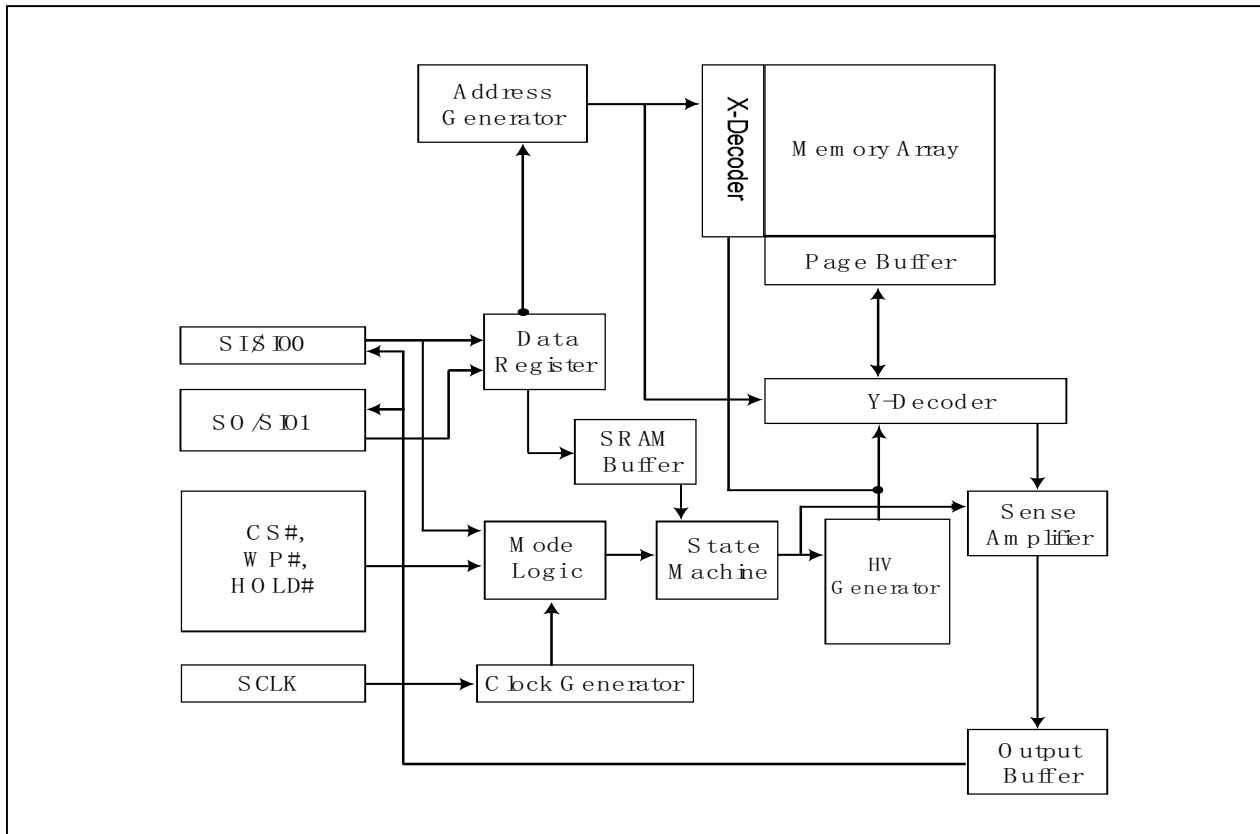
MStar Confidential
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MECHANICAL DIMENSIONS



IC Block Diagram

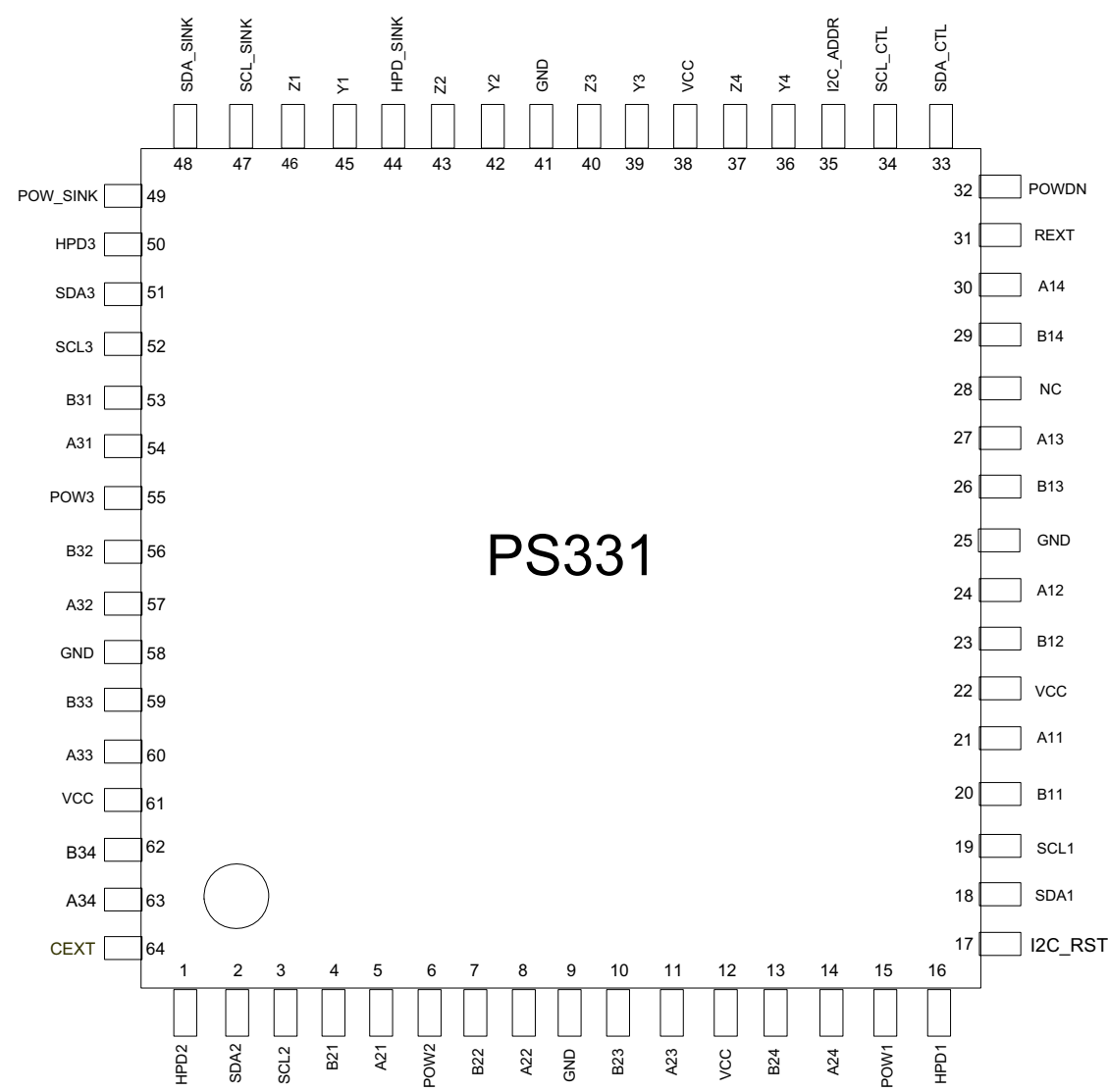
U42 (32M BIT CMOS SERIAL FLASH) SOP8



IC Block Diagram

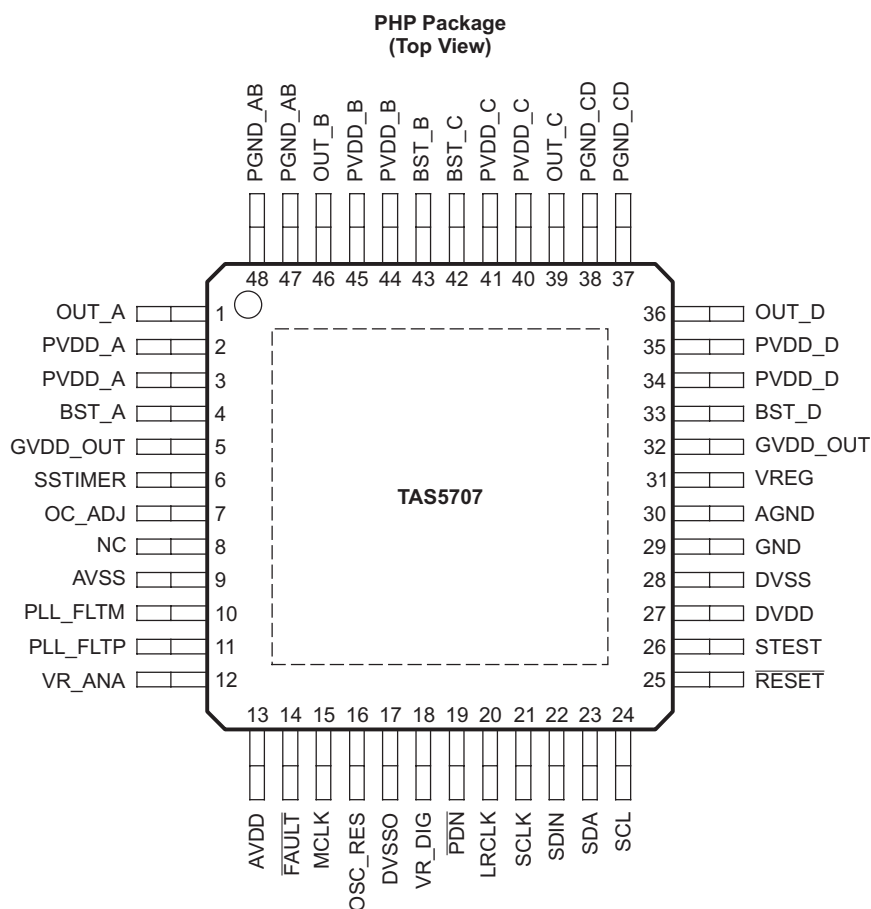
U19(HDMI SWITCH) PS331TQFP64G

Sil9185 Pin Mapping



**Table1. Pin Descriptions**

Name	I/O	Description
Axy	I	x = 1, 2, 3 for TMDS input channel number y = 1, 2, 3, 4 for TMDS positive differential data or clock inputs
Bxy	I	x = 1, 2, 3 for TMDS input channel number y = 1, 2, 3, 4 for TMDS negative differential data or clock inputs
Yx	O	x = 1, 2, 3, 4 for TMDS positive differential outputs
Zx	O	x = 1, 2, 3, 4 for TMDS negative differential outputs
HPDx	O	x = 1, 2, 3 for Hot Plug Detection output to source devices
HPD_SINK	I	Hot Plug Detection input from sink device; internal pull-down at ~80K ohm Each port's HPD can be set independently by I2C registers. See the Register Definition Table for details
SCLx, SDAx	I/O	SCLx: I2C bus clock lines, SDAx: I2C bus data lines; x = 1, 2, 3; 5 V tolerant; internal pull-down at ~1.1M ohm
SCL_SINK	I/O	Sink side I2C clock line
SDA_SINK	I/O	Sink side I2C data line
SDA_CTL SCL_CTL I2C_ADDR	I	I2C_ADDR: I2C control bus address LSB SDA_CTL: I2C control data; SCL_CTL: I2C control clock SCL_CTL / SDA_CTL control is described in the Register Definition Table
REXT	I	Bias Current setting by External resistor, 500 ohm 1% to GND
POW_SINK	O	A 3.3 V CMOS output which indicates the selected port being connected to the corresponding Source port POW_SINK is the status for the selected Port Source Connection Detection. When the selected port 5 V Source Supply is detected, POW_SINK will output HIGH to indicate the Source is connected For each port, the Port Source Connection status can also be accessed by I2C registers
I2C_RST POWDN	I/O	I2C_RST assertion will reset the I2C control logic; POWDN assertion will power down the chip. PS331 power-on reset and subsequent operation are controlled automatically by on-chip configuration logic. There is usually no need to reset the I2C control logic unless for the system debugging and development purpose. The power down control provides a tool for system to manage the PS331 power for power sensitive applications
POW1 POW2 POW3	I	Source Connection Detection Inputs These pins shall be connected to HDMI connector Source DC 5 V supply pins through a 37K ohm resistor respectively. If the Source Connection Detection is not used, these pins shall be connected to local VCC (3.3 V) The Source Connection Detection status for each port is accessible through I2C registers
CEXT	I/O	An external capacitor is connected for supply regulation. The capacitor should be 2.2 uF or larger for power noise filtering
GND		Ground connection
VCC		Power supply at 3.3 V

48-TERMINAL, HTQFP PACKAGE (TOP VIEW)

P0075-01

PIN FUNCTIONS

PIN		TYPE (1)	5-V TOLERANT	TERMINATION (2)	DESCRIPTION
NAME	NO.				
AGND	30	P			Analog ground for power stage
AVDD	13	P			3.3-V analog power supply
AVSS	9	P			Analog 3.3-V supply ground
BST_A	4	P			High-side bootstrap supply for half-bridge A
BST_B	43	P			High-side bootstrap supply for half-bridge B
BST_C	42	P			High-side bootstrap supply for half-bridge C
BST_D	33	P			High-side bootstrap supply for half-bridge D
DVDD	27	P			3.3-V digital power supply
DVSSO	17	P			Oscillator ground
DVSS	28	P			Digital ground
GND	29	P			Analog ground for power stage
GVDD_OUT	5, 32	P			Gate drive internal regulator output
LRCLK	20	DI	5-V	Pulldown	Input serial audio data left/right clock (sample rate clock)
MCLK	15	DI	5-V	Pulldown	Master clock input

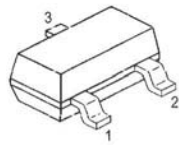
(1) TYPE: A = analog; D = 3.3-V digital; P = power/ground/decoupling; I = input; O = output

(2) All pullups are weak pullups and all pulldowns are weak pulldowns. The pullups and pulldowns are included to assure proper input logic levels if the pins are left unconnected (pullups → logic 1 input; pulldowns → logic 0 input).

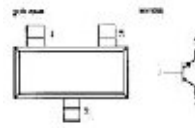
PIN FUNCTIONS (continued)

PIN		TYPE (1)	5-V TOLERANT	TERMINATION (2)	DESCRIPTION
NAME	NO.				
NC	8	–			No connection
OC_ADJ	7	AO			Analog overcurrent programming. Requires resistor to ground.
OSC_RES	16	AO			Oscillator trim resistor. Connect an 18.2-kΩ 1% resistor to DVSSO.
OUT_A	1	O			Output, half-bridge A
OUT_B	46	O			Output, half-bridge B
OUT_C	39	O			Output, half-bridge C
OUT_D	36	O			Output, half-bridge D
PDN	19	DI	5-V	Pullup	Power down, active-low. PDN prepares the device for loss of power supplies by shutting down the noise shaper and initiating PWM stop sequence.
PGND_AB	47, 48	P			Power ground for half-bridges A and B
PGND_CD	37, 38	P			Power ground for half-bridges C and D
PLL_FLTM	10	AO			PLL negative loop filter terminal
PLL_FLTP	11	AO			PLL positive loop filter terminal
PVDD_A	2, 3	P			Power supply input for half-bridge output A
PVDD_B	44, 45	P			Power supply input for half-bridge output B
PVDD_C	40, 41	P			Power supply input for half-bridge output C
PVDD_D	34, 35	P			Power supply input for half-bridge output D
RESET	25	DI	5-V	Pullup	Reset, active-low. A system reset is generated by applying a logic low to this pin. RESET is an asynchronous control signal that restores the DAP to its default conditions, and places the PWM in the hard mute state (tristated).
SCL	24	DI	5-V		I ² C serial control clock input
SCLK	21	DI	5-V	Pulldown	Serial audio data clock (shift clock). SCLK is the serial audio port input data bit clock.
SDA	23	DIO	5-V		I ² C serial control data interface input/output
SDIN	22	DI	5-V	Pulldown	Serial audio data input. SDIN supports three discrete (stereo) data formats.
SSTIMER	6	AI			Controls ramp time of OUT_X to minimize pop. Leave this pin floating for BD mode. Requires capacitor of 2.2 nF to GND in AD mode. The capacitor determines the ramp time.
STEST	26	DI			Factory test pin. Connect directly to DVSS.
FAULT	14	DO			Backend error indicator. Asserted LOW for over temperature, over current, over voltage, and under voltage error conditions. De-asserted upon recovery from error condition.
VR_ANA	12	P			Internally regulated 1.8-V analog supply voltage. This pin must not be used to power external devices.
VR_DIG	18	P			Internally regulated 1.8-V digital supply voltage. This pin must not be used to power external devices.
VREG	31	P			Digital regulator output. Not to be used for powering external circuitry.

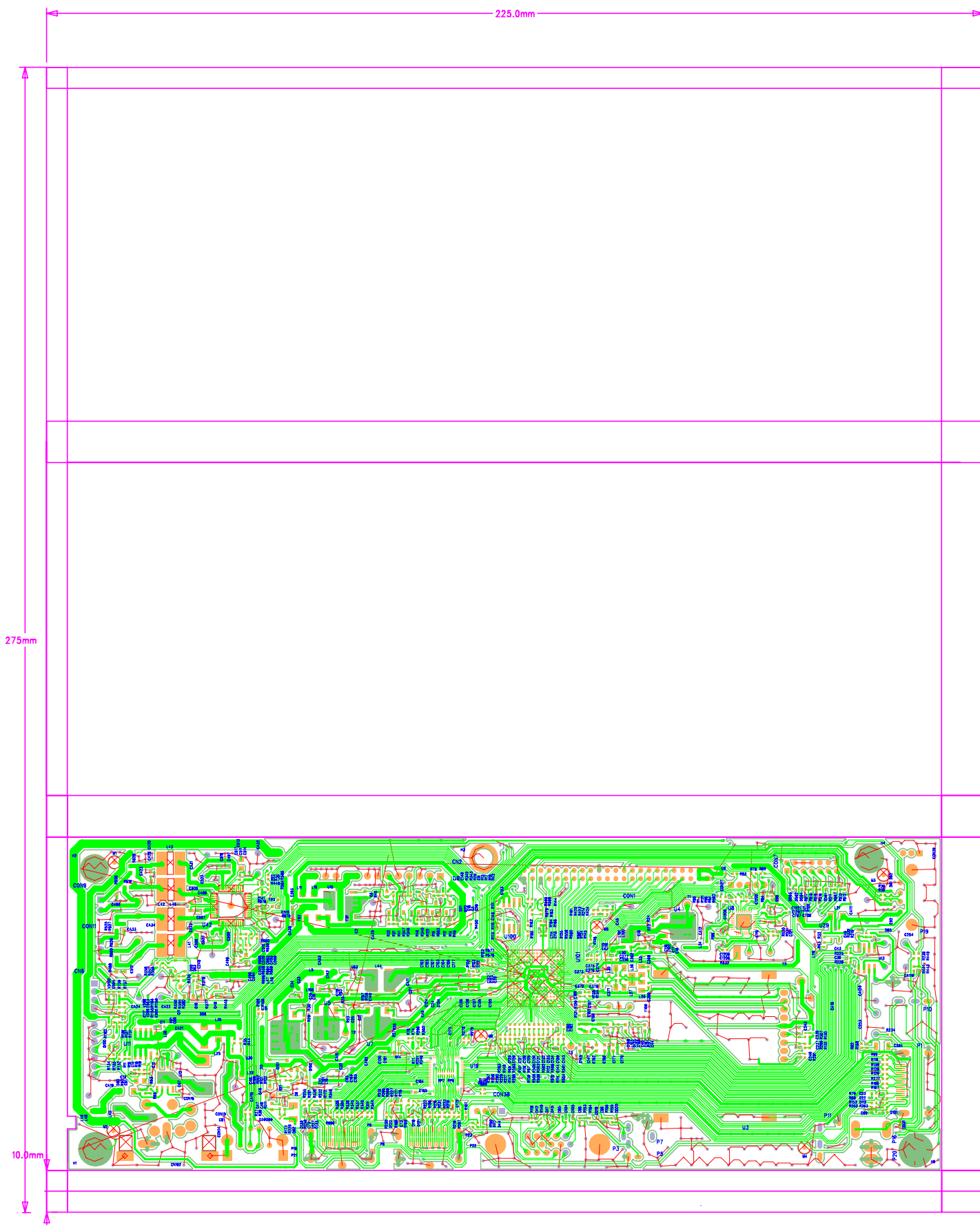
Transistor Mark

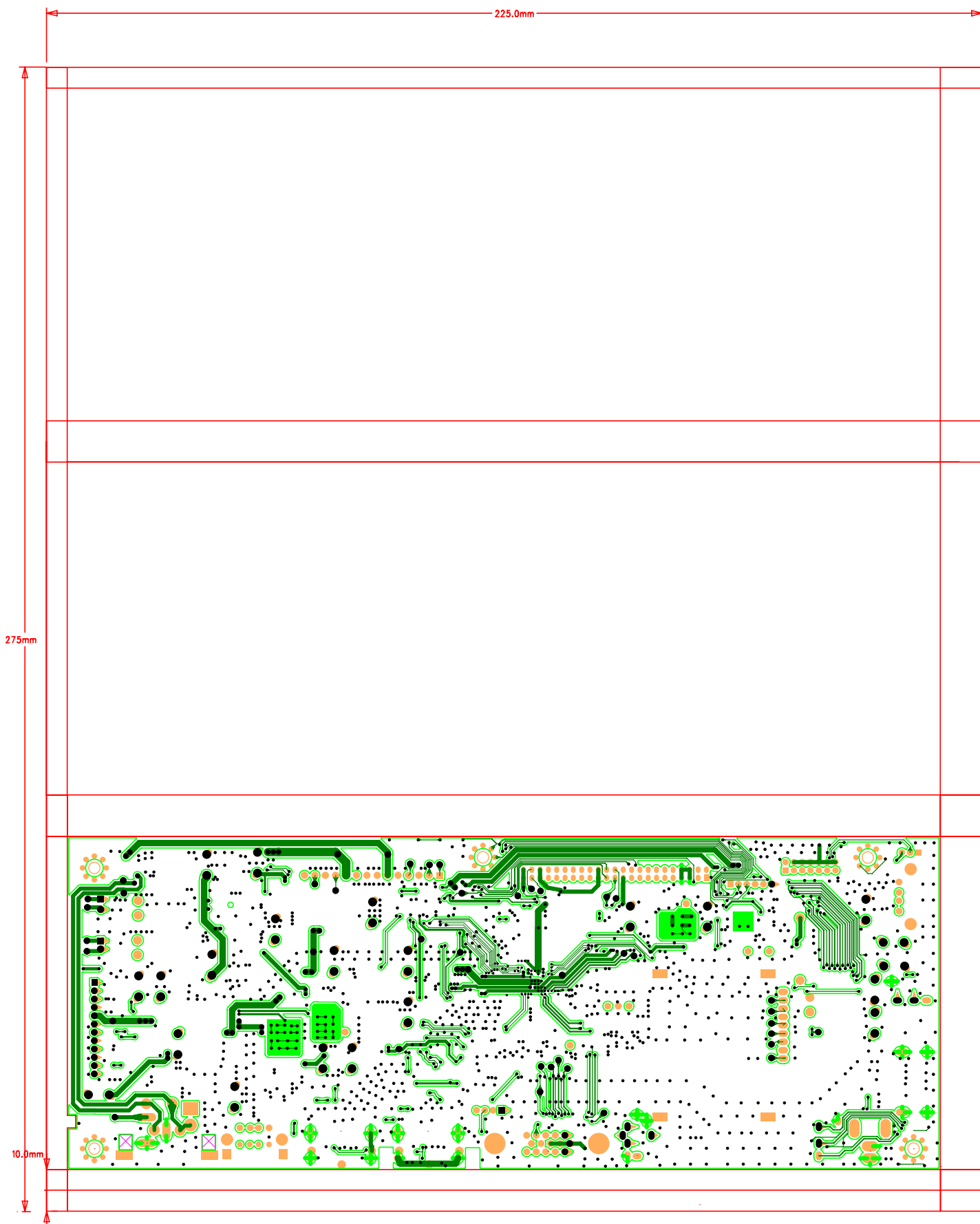


SMBT3906



PMBT 3904





8M48A/S Factory Adjust Menu

(V0.0)

1. Description

Enter factory mode:

Open source menu, and then press digital button “3”, “1”, “9”, “5” in turns to enter the factory menu. Press ↑ and ↓ button to choose the item, press OK button enter the submenu, **press MENU to return to upper menu**, press ← and → button to adjust the value,

Leave factory mode:

Press menu button to back to upper menu until leave factory mode.

Software information:

Enter factory mode, you can get the software information from the bottom of **the** menu.

Panel information:

Enter factory mode, enter “**Panel SETTING**” item, you can get the panel information from the bottom of **this** menu.

Aging mode:

You can press the shortcut key in the factory remote control to open or close the aging mode.

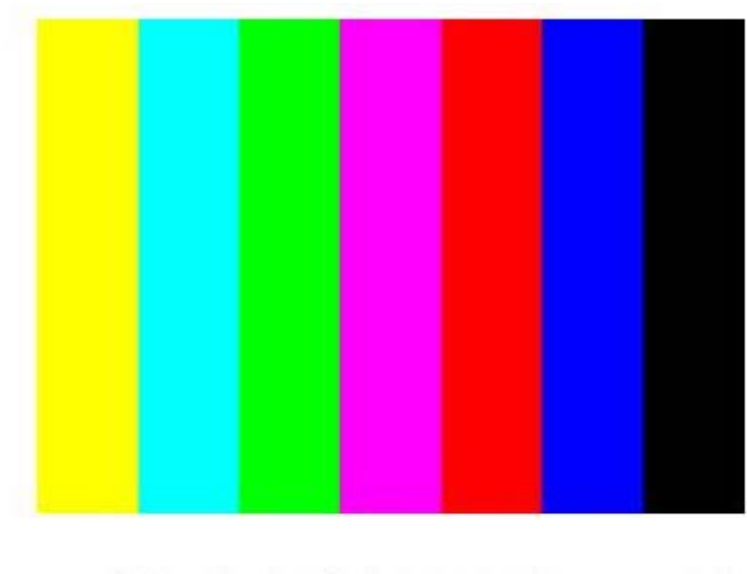
ADC adjusts:

YPBPR source ADC:

Switch to YPBPR source, input 100% color bar pattern, enter

factory, select “**AUTO ADC**” item in the “**ADC CALIBRATION**” menu, press → button to begin auto adjust. When it is finish, it will show “OK” or “FAILE”. If “FAILE” is showed, you need to try again.

NOTE: YPBPR ADC need to do twice by use 576P and 720P signal separate.



VGA source ADC:

Switch to PC source, input tessellated white and black signal, enter factory, select “**AUTO ADC**” item in the “**ADC CALIBRATION**” menu, press → button to begin auto adjust. When it is finish, it will show “OK” or “FAILE”. If “FAILE” is showed, you need to try again.

**White balance:**

Enter factory mode, enter “**W/B ADJUST**” item, you can adjust white balance in this menu.

Over scanning:

Enter factory mode, enter “**Panel SETTING**” submenu, enter “**OVERSCAN**” submenu, you can adjust the over scan in these menu.

OutFactory reset:

Enter factory mode, enter “**SYSTEM SETTING**” item, select “**OUT FACTORY SET**” item and press OK button to reset the flash memory. TV set will restart when it is finish.

INIT EEPROM:

Enter factory mode, enter “**SYSTEM SETTING**” item, select “**FAC RESET DEFAULT**” item and press OK button to reset the EEPROM. TV set will restart when it is finish.

Update software (by USB):

Copy the new software (name by “MERGE.bin”) to the root directory of USB drive. Plug the drive to the **USB2** socket (if there are two USB socket, make sure you use the socket 2). Enter factory, select “Software Update (USB)” item and press OK button to begin update. TV set will restart when finish. Note, you need to restart the TV set again by AC power.

We suggest you need to do “**INIT EEPROM**” and “**Factory reset**” after software updat

2. More information

FACTORY MENU			Default Value	Remark
ADC ADJUST				
	MODE			Select source
	R-GAIN			Red gain
	G-GAIN			Green gain
	B-GAIN			Blue gain
	R-OFFSET			Red offset
	G-OFFSET			Green offset
	B-OFFSET			Blue offset
	AUTO ADC			Auto ADC calibration
W/B ADJUST				
	MODE			Select source
	TEMPERATURE			Select Neutral/Warm/Cool/Personal
	R-GAIN			Red gain
	G-GAIN			Green gain
	B-GAIN			Blue gain
	R-OFFSET			Red offset
	G-OFFSET			Green offset
	B-OFFSET			Blue offset
	COPY ALL			Copy there values to all source!
PANEL SETTING				
	TI MODE		1	LVDS data format
	LVDS PORT		0	LVDS data interface

	LVDS BIT		8BitPanel	
	PWMFREQUENCY		0	
	PWM DUTY			
	OVERSCAN			
		OVERSCAN_RESOLUTION		
		HPOSITION		Horizontal position
		VPOSITION		Vertical position
		HSIZE		Horizontal size
		VSIZE		Vertical size
SYSTEM SETTING				
	FACHOTKEY		OFF	Factory hot key enable
	TTX BRI		170	Logo enable
	WHILE PATTERN		Off	NO USED
	POWER REMIND		10	Preset the no signal standby time
	BULE SCREEN		ON	Blue or Black screen when no signal
	VIDEO AGC		ON	
	DLC		ON	DLC enable
	WHILE BLACK STRENCH		Off	White/black strength enable
	POWER CONDITION		Off	Power state remember
	FAC RESET DEFAULT			Reset the EEPROM
	OUT FACTORY RESET			Reset the flash memory
	AGING MODE		off	If you set this item on, put the “stop”(■) key on the remote control can exit aging mode .
	CHANNEL PRESET			Reset channel to default

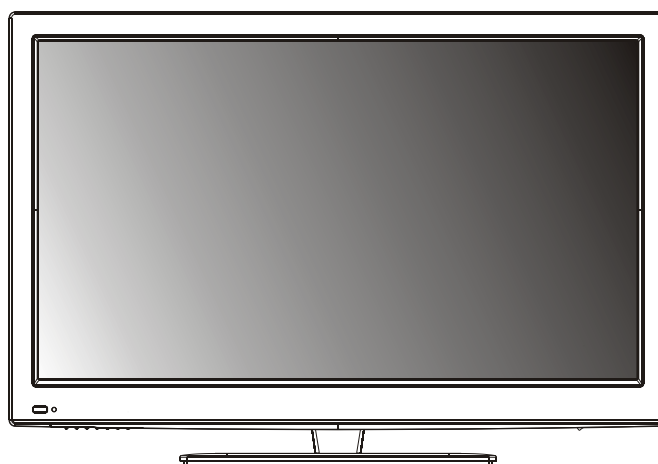
	Channel Preset			Reset channel to default
	NO SIGNAL MUTE AMP			
	OUT FAC SOUND SYS		BG	
	AGC GAIN		19	
LANGUAGE SETTING				
	S-CHINESE			繁体中文
	SPANISH			西班牙语
	FRENCH			法语
	PORTUGUESE			葡萄牙语
	RUSSIAN			俄罗斯语
	BIG CHINESE			繁体中文
	BULGARIAN			保加利亚语
	SLOVAK			斯洛伐克语
	FINNISH			芬兰语
	INDONESIA			印度尼西亚
	ARABIC			阿拉伯语
	Arabic			阿拉伯语
	FARSI			波斯语
	HEBREW			希伯来语
	THAI			泰语
	VIETNAM			越南文
	TURKISH			土耳其文
SOURCE SETTING				
	TV		On	

	AV1		Off	
	SCART		Off	
	HDMI1		On	
	HDMI2		On	
	HDMI3		On	
	YPbPr1		On	
	USB1		On	
	USB2		On	
AGALOG CURVE				
	MODE			
	PICTURE MODE			
	BRIGHTNESS CURVE			
	CONTRAST CURVE			
	SATURATION CURVE			
	HUE CURVE			
	SHARPNESS CURVE			
	VOLUME CURVE			
	BACKLIGHT		100	
HOTEL FUNCTION				
	HOTEL MODE		off	Hotel mode enable
	IR LOCK		off	
	LOCAL KEY LOCK		off	
	USER SETTING SAVE		On	
	VOLUME FIXED		off	
	POWER ON VOL VALUE		10	

	MAX VOLUME		30	
	POWER ON SOURCE		TV	
	SCALE LOCK		off	
	CHANNEL SEARCH LOCK		off	
OTHER OPTION				
	SSC			LVDS and DDR frequency setting
	UART DEBUG		HK	NO USED
	SPECIAL			NO USED
	VIF1	VIF1		VIF setting
		VIF2		VIF-AGC-VGA-BASE item is used for adjust the TUNER AGC
		VIF3		
	POWER ON LOGO		NONE	
	WDT		On	
	Teletext		On	NO USED
	Nicam		On	
	LOGO SET IN USB			
	USB SRC NAME		USB	
	Backlight display control			
	3D Key control		On	
	Equalizer		off	
Software Update(USB)				

Skyworth

Instruction Manual



42E65

Size:A5

Description: MANUAL(8M48A)	
Job No.	Brand Name: SKYWORTH
MODEL: 32E65	P/No.
REV:2	Scale:
Engineering Dept:	
Artwork By:	Date: 2012-01-17
Checked By:	Date:
Approved By:	Date:

CONTENT

CONTENT	1
WARNING AND PRECAUTION	2-3
INTRODUCTION, FUNCTIONS AND FEATURES	4
PREPARATION	5
Positioning The TV Set	5
Antenna And Power Connections	5
Inserting Batteries In The Remote Control Handset	5
EXTERNAL SCHEMATIC AND INSTALLATION	6-11
Front Panel	6
Back Panel	7
Antenna/Cable Connection	8
Remote Control	9-11
MENU CONTROL	12-16
Basic Operation	12
Picture Settings	12
Sound Settings	13
Installation Settings	14
Setup Settings	15
Advanced Settings	15
PC Settings.....	16
USB CONTROL	17-22
Gentle Reminder When Using The USB Player.....	17
Caution	17
USB File Playback Support	17
Remote Control	18
USB Menu	18
Video Menu	19
Music Menu	20
Photo Menu	21
Text Menu	22
TROUBLESHOOTING	23
SPECIFICATIONS	24

WARNING AND PRECAUTION

Read all of the instructions before operating the set. Keep these instructions well for later use.

PRODUCT

- ◆ The ventilation should not be impeded by covering the ventilation openings with items, such as newspaper, table-cloths, curtains, etc.
- ◆ Do not push any objects of any kind into this unit through the cabinet slots as they could touch the current carrying parts or short-circuit parts, resulting in fire, electric shock, or damage to the unit.
- ◆ Unplug the set when it is not used for a long period of time.
- ◆ Do not dismantle this product by yourself as this may cause damage.
- ◆ Do not touch the screen surface with fingers as this may scratch or mar the LED screen.
- ◆ Do not impact the LED screen with hard pressure as this may damage the LED screen severely.
- ◆ The battery (battery or batteries or battery pack) shall not be exposed to excessive heat such as sunshine, fire or the like.

POWER

- ◆ Please use the core plug as required.

PLUG

Unplug the set under the following conditions:

- ◆ If the set will not be used for a long period of time.
- ◆ If the power cord or the power outlet/plug is damaged.
- ◆ Follow the instructions to install and adjust the product. Adjust those controls that are covered in this operating instructions as improper adjustment of other controls may result in damage. If this happens, unplug the set and refer to the service personnel.
- ◆ If the set is subject to impact or has been dropped to have the cabinet damaged.

POWER CORD & SIGNAL CABLE

- ◆ Protect the power cord & signal cable from being trampled.
- ◆ Do not overload the power cord or power outlet.
- ◆ Do not expose the power cord & signal cable to moisture.
- ◆ Please protect the power cord or signal cable and do not stomp, twist and squeeze it. Careful inspect to the power cord and signal cable.

WARNING AND PRECAUTION

USE ENVIRONMENT

- ◆ Do not install this equipment in a confined space such as a book case or similar unit. To prevent injury, this apparatus must be securely attached to the wall mount fastened on the wall.
- ◆ Place the set on a place that allows good ventilation.
- ◆ Do not use the set near damp, and cold areas, protect the set from overheating.
- ◆ Keep away from direct sunlight.
- ◆ The apparatus shall not be exposed to dripping or splashing and that no objects filled with liquids, such as vases, shall be placed on the apparatus.
- ◆ Do not use the set near dust place.
- ◆ To reduce the risk of fire or electric shock, do not expose this appliance to rain or moisture.
- ◆ No naked flame sources, such as lighted candles, should be placed on the apparatus.

CLEANING

- ◆ Dust the set by wiping the screen and cabinet with a soft, clean cloth.
- ◆ Do not apply excessive force to the screen when cleaning.
- ◆ Do not use water or other chemical cleaner to clean the screen as this may damage the surface of the LED screen.

COMMENT

- ◆ Time function of this TV set is only a reference. It is not an exact real-time clock.
- ◆ This manual is only a guide to operate the TV set. We may change some items of the model. But the change will not affect your normal use. If there are any differences between the Manual and the TV set, please take the TV set as the standard.

INTRODUCTION, FUNCTIONS AND FEATURES

BRIEF INTRODUCTION:

Thanks for your purchase of our digital high-definition LED television! This product with diverse functions is designed to fulfill the optimum requirements from commercial, industrial and household uses. LED television possesses the display function of both TV and PC. It features advanced picture performance, smaller in size and lighter in weight, meanwhile, consumes less power and makes no radiation. The new generation LED provides you with comfortable, safe and environmental protection feeling. Some description could be little different base on different model.

BASIC FUNCTION

1. Auto and manual tuning.
2. AV and YPbPr inputs are available.
3. Full-function infrared remote control.
4. Sleep timer and program recall shortcut.
5. Narrow design of ultra-thin ultra-light.
6. A wealth of reception(TV / AV / YPbPr / PC / HDMI / USB).
7. Digital Still Function.

PC MONITOR FUNCTIONS

1. Auto resizing & centering, perfect geometric graphic.
2. Supports PC sound source input.
3. Supports 640x480,800x600,1024x768,1280x1024, PC formats, refresh rate is 60Hz.

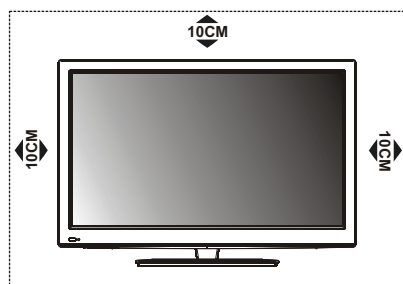
FEATURES

1. Embedded digital color gain control circuit, provides better brightness and reality.
2. Embedded 5-line comb filter.
3. Black/white Level Stretch Circuit.
4. High class LCD screen features, high brightness, high contrast and wide viewing angle, responding fast.
5. Component input supports 1080P high definition signal formats.
6. Support HDMI input.
7. This TV can be used as a high-performance PC monitor for it has a VGA interface.
Computer sound source can also be supported to realize the multimedia function.
8. Low power consumption in standby mode to save energy.
9. Latest high integrated digital processor chip.

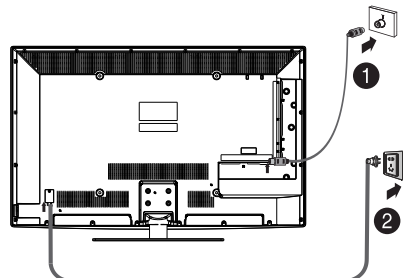
PREPARATION

Positioning The TV Set

Install Display on solid horizontal surface such as a table or desk. For ventilation, leave a space of at least 10cm free all around the set. To prevent any fault and unsafe situations, please do not place any objects on top of the set. This apparatus can be used in tropical and/or moderate climates.



Antenna And Power Connections

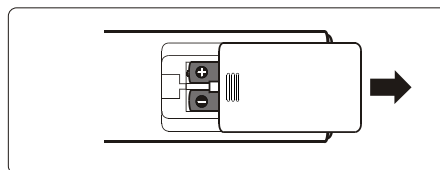


1. Connect the antenna cable into the antenna input terminal at the rear panel and wall antenna socket.

2. Connect the power plug into the wall outlet. (The type of power plug provided may be different from the above picture for some countries.)

Inserting Batteries In The Remote Control Handset

- ◆ Remove the battery cover located on the back of the handset by gently pulling up-wards from the indicated part.
- ◆ Insert two AAA Alkaline or equivalent batteries. Following the +/- marking in the battery compartment.
- ◆ Replace the battery cover.



Precautions when using batteries

- ◆ Do not use old and new batteries together.
- ◆ Do not use different types of batteries (for example, Manganese and Alkaline batteries) together.
- ◆ Note that there are chargeable and non-chargeable batteries. Do not attempt to charge non-chargeable batteries.
- ◆ Remove the batteries from the remote control unit if you do not intend to use the unit for a long time.

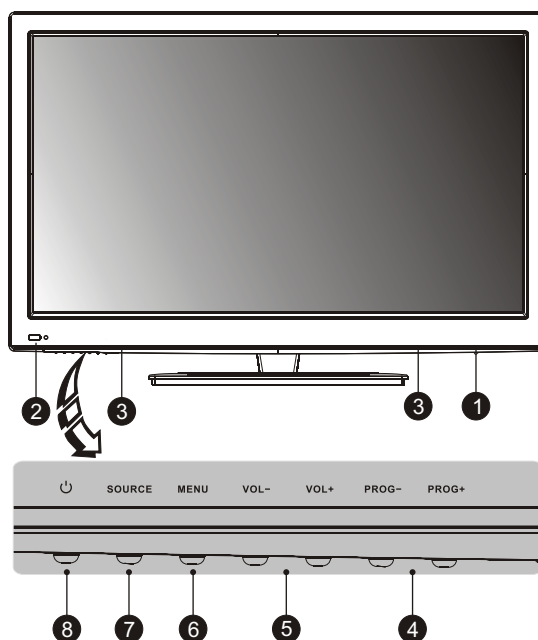
Note:

- ▶ Do not drop the remote control unit.
- ▶ Do not subject the remote control unit to physical shocks.
- ▶ Keep the remote control unit dry. Wetting it may cause the unit to malfunction.
- ▶ Replace the batteries with new ones when operation of the unit deteriorates.

EXTERNAL SCHEMATIC AND INSTALLATION

Front Panel

Note: The graphics are for representation only.

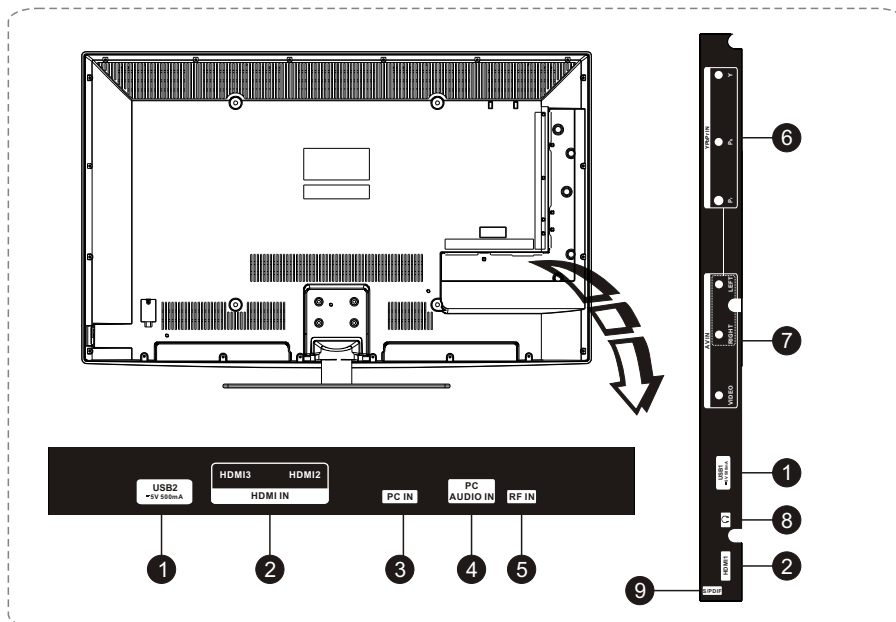


- 1.Power Button
- 2.Power Indicator / Remote Sensor
- 3.Speakers
- 4.Program Up/Down Button
- 5.Volume Up/Down Button
- 6.Menu Button
- 7.Source Button
- 8.Standby Button

EXTERNAL SCHEMATIC AND INSTALLATION

Back Panel

Note: The graphics are for representation only.

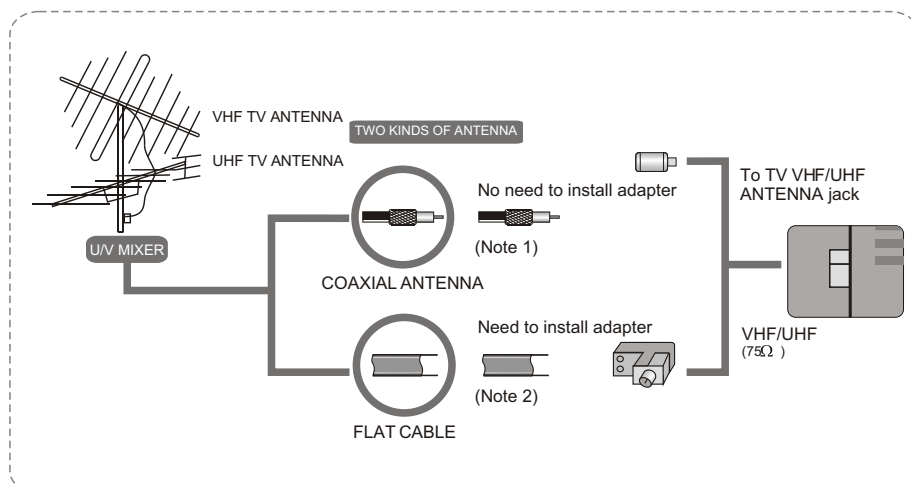


1. **USB1\USB2:** USB port.
2. **HDMI1\HDMI2\HDMI3:** Connect HDMI input signal from signal source such as DVD.
3. **PC IN:** Connect a PC via a VGA cable.
4. **PC AUDIO IN:** Audio input for PC and Audio input for HDMI when the signal is DVI timing.
5. **RF IN:** Connect a coaxial cable to receive signal from the antenna or cable.
6. **Y Pb Pr(Component input):** Connect YPbPr signal from signal source such as DVD.
Share the same AUDIO input with AV IN.
7. **AV IN:** Connect AUDIO and VIDEO input signal from signal source such as DVD.
8. **EARPHONE:** Audio output, speakers will be muted when earphone plugged.
9. **S/PDIF:** Use a digital optical cable to connect your TV to a compatible audio receiver.

EXTERNAL SCHEMATIC AND INSTALLATION

Antenna /Cable Connection

There are two kinds of antenna in use.



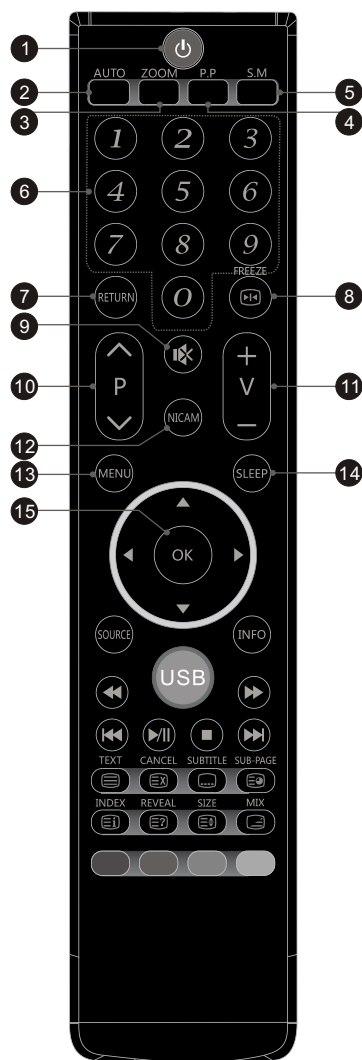
1. Connect the plug of the antenna cable or CATV cable to the cable (not provided with this unit), then connect to the antenna input of this unit for best reception.
2. If the antenna cable in your home is other than the above two, or you have problems in installing the antenna, please contact your dealer.

Notes:

1. Current outdoor antenna or cable TV usually use 75 OHM coaxial antenna cable. For better reception, we suggest using this kind of antenna cable.
2. Flat cable or indoor antenna are old designed, the reception may not be good enough.

EXTERNAL SCHEMATIC AND INSTALLATION

Remote Control



1. Standby()

Press to turn the TV on or off(standby).

2. Auto

Press to adjust the picture automatically in PC mode.

3.Zoom

Press to select the desired picture aspect ratio.

4. Picture Mode(P.P)

Press to select the desired picture mode.

5. Sound Mode(S.M)

Press to select the desired sound mode.

6. Program Select (0-9)

Press to select the TV channel directly.

7.Return Button

Press to return to the previously viewed channel.

8. Freeze()

Press to freeze or unfreeze the picture.

Note: This button is unable in USB channel.

9.Mute()

Press to mute or restore the volume.

10.Program Up/Down (P^/V)

Press to select previous/next channel.

11.Volume Up/Down (V+/V-)

Press to adjust the volume.

12.Nicam (Option)

Press to select a different sound when the source is different.

13.Menu

Press to enter or exit from the TV menu.

14. Sleep

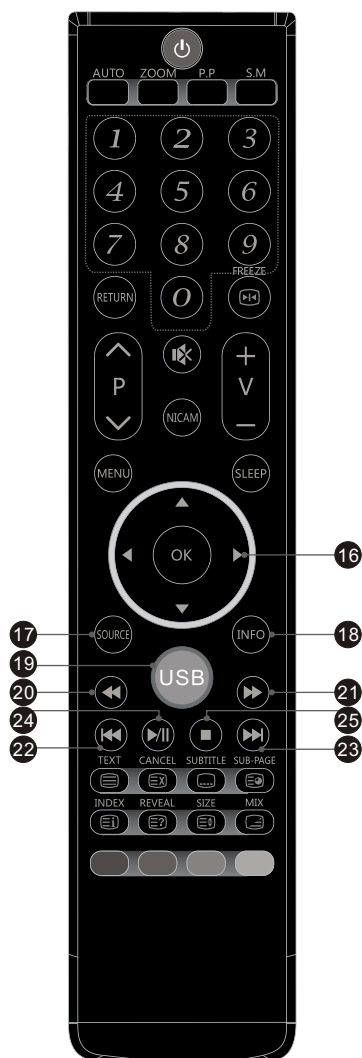
Press to set the time to switch the TV to standby mode.

15.OK

Press to confirm and execute the selection.

EXTERNAL SCHEMATIC AND INSTALLATION

Remote Control



16. Up/Down/Left/Right Cursor (▲/▼/◀/▶)

Press to select or adjust the desired item on the menu.

Note: IN USB mode, Press "▲/▼/◀/▶" cursor can return previous menu.

17.Source

Press to select the input source mode.

18.INFO

Press to display relevant information such as screen format, source, etc.

19.USB

Press to enter to the USB1 or USB2 channel.

20.Fast Backward Button(◀◀)

Press to fast reverse in USB mode.

21.Fast Forward (▶▶)

Press to fast forward in USB mode.

22.Previous (◀◀)

Press to play the previous music or movie in USB mode.

23.Next (▶▶)

Press to play the next music or movie in USB mode.

24.Play & Pause (▶||)

Press to pause playback in USB mode, press again to continue playback.

25.Stop (■)

Press to stop the music or movie in USB mode.

EXTERNAL SCHEMATIC AND INSTALLATION

Remote Control



26. Text ()(Option)

Press to enter the teletext menu.

27. Cancel ()(Option)

Press this button to return to TV program temporarily while searching for a Teletext page. When the search is done, the page number will be displayed on the upper left of the screen. Press again to return to the Teletext page.

28. SUB-PAGE ()(Option)

Press this button to enter or exit subpage mode (if subpage is available). Press Red / Green buttons to select the desired subpage.

29. Subtitle ()(Option)

Press this button to access subtitle service directly (if the channel has the subtitle service broadcasting).

30. Index ()(Option)

Press this button to display index page.

31. Mix ()(Option)

Press this button to superimpose the teletext over the TV program. Press again to return to normal teletext mode.

32. Reveal ()(Option)

Press this button to display concealed information, such as solutions to riddles or puzzles. Press again to remove the information from the display.

33. Size ()(Option)

Enlarge the teletext display: Press this button once to enlarge upper half of the screen. Press this button again to enlarge lower half of the screen. Press this button again to resume to normal screen size.

34. Colour (Red/Green/Yellow/Blue)

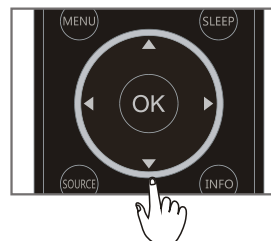
Press these buttons that corresponds to the desired menu or page number.

MENU CONTROL

This section explains the menus of your TV. Each menu is outlined and detailed to help you get the most from your TV.

Basic Operation

1. Press MENU on the remote control or on the TV key panel to display the main menu.
2. Press ◀/▶ and ▲/▼ to highlight the desired menu/item.
3. Press ◀/▶ to change the setting.
4. Press MENU to save setting and go back to last menu.



Note:

Buttons on the key panel have the same functions as the corresponding buttons on the remote control.

The scheme and description are in TV mode as below, there will be a note if there is exception.

Picture Settings

Picture Mode

Adjusts the picture mode: Personal, Bright, Normal, Soft four kinds of image mode.

Brightness

Adjusts the brightness of the picture, and usually is adjusted together with Contrast.

Contrast

Adjusts the difference between the light and dark areas of the picture. To get better picture value, Contrast should be adjusted to the proper value.

Color

Adjusts the richness of colour. This function is not available in PC mode.

Tint

Adjust the tint of the picture.

Only can be done under the NTSC system.

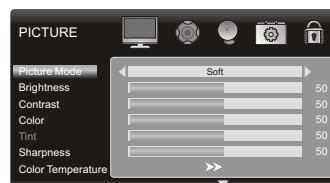
Sharpness

Adjusts the sharpness of the picture. This function is not available in PC mode.

Color Temperature

Press OK button to enter the color temperature sub menu.

Color Temperature Adjusts the colour temperature of the picture, to select the option: Cool, Neutral, Warm, Personal as you desired.



MENU CONTROL

Neutral: Keep the original white

Warm: Red

Personal: The user may customize the color temperature.(Red/Green/Blue).

Cold: Blue.

Display Mode

To select five modes are available including: Panorama, Movie, Caption, 16:9, 4:3 and Auto.

Note: In PC channel only 16:9 and 4:3 display mode can be selected.

In HDMI channel including: Panorama, Just-Scan, Movie, Caption, 16:9, 4:3 and Auto display mode can be selected.

DNR

To select four modes of digital noise reduction are available including Off, Low, Middle and High.

Backlight (Option)

Adjust peak brightness of the backlight (Low / Middle / High).

Sound Settings

Sound Mode

Select the most suitable sound mode according to your watching contents(Personal, Standard, Music, Film, News).

Bass

Control the level of low-pitched sound.

Treble

Control the level of high-pitched sound.

Balance

Control the audio balance between the right and left TV speakers.

AVL

This function may be set as On or Off. Auto Volume Level can set the volume automatically adjust corresponding to the input audio.

Surround

Press this option to enter to set On or Off.



MENU CONTROL

Installation Settings

Note: These settings are only available in TV mode.

Channel No.

Sets the received TV channel No.

Colour system

Selects colour system.

Sound system

Selects sound system. If there is no sound or the sound is weak, you should change the sound system accordingly.

Auto Search

Searches and saves channels automatically.

Manual Search

Searches the channel manually.

Press ► to search upwards (higher frequency),
press MENU to stop the searching process.

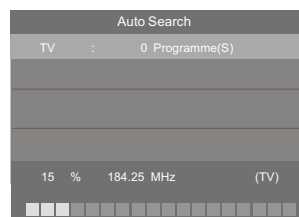
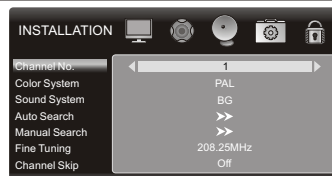
Press ◀ to search downwards (lower frequency),
press MENU to stop the searching process.

Fine Tuning

Effect on the current TV signal images
are not satisfied, you can use this function to adjust.

Channel Skip

You can skip unnecessary program channels of your choice not to be displayed during viewing and scanning when pressing the "P^/v" buttons. Select "OFF" by pressing "◀/▶" buttons to select the channel that would not like to skip from the channel scan operation.



MENU CONTROL

Setup Settings

OSD Language

Select you desired OSD language.

TTX Language

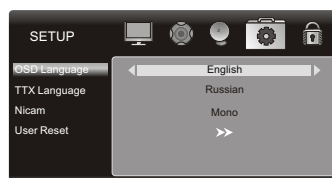
Select the desired Teletext language: West Europe / East Europe / Russian / Arabic.

NICAM (Option)

Press "◀/▶" button to select other sound when the signal has more than one.

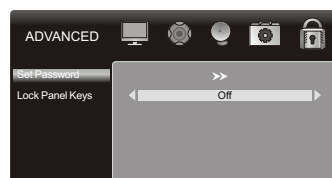
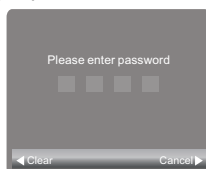
User Reset

Restore the menu setting back to default, do not include the "Set Password" item.



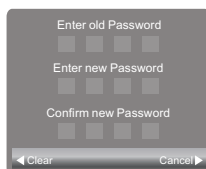
Advanced Settings

Press ◀/▶ button to select Advanced menu, then press [OK] button to enter. Input password to enter, default password is "0000".



Set Password

To set your own password, first enter the old password, and then enter your new password twice, following the prompts as illustrated below.



Note:

- Default password is [0000].
- The Super password is [8899].

In the event whereby new password is forgotten, you can use Super Password as the old password to reset a new password. Or directly using the super password to enter.

Lock Panel Keys

Set On/Off to Lock or unlock the control on the panel.

MENU CONTROL

PC Settings

Note: These settings are only available in PC mode.

when you connect VGA cable to the jacks of PC and select the signal source as "PC" the screen menu will be activated. You can use the function to adjust the display setting automatically or manually.

1. AUTO ADJUST

Press " $\blacktriangleleft/\blacktriangleright$ " button to auto adjust PC size and position.

2. H. Position

Press " $\blacktriangleleft/\blacktriangleright$ " button to adjust the H-Position of the television.

3. V. Position

Press " $\blacktriangleleft/\blacktriangleright$ " button to adjust the V-Position of the television.

4. Phase

Press " $\blacktriangleleft/\blacktriangleright$ " button to adjust the phase of the picture.

5. Frequency

Press " $\blacktriangleleft/\blacktriangleright$ " button to adjust the updating frequency of the picture.



USB CONTROL

Gentle Reminder When Using The USB Player

1. Some USB storage devices may not be compatible to operate smoothly with this TV.
2. Back up all of the data in the USB storage device in case if data was lost due to unexpected accident. We do not assume any liability for the losses by misuse or malfunction. Data backup is consumer's responsibility.
3. For large file sizes, the loading speed may be slightly longer.
4. The recognition speed of a USB storage device may depend on each device.
5. When connecting or disconnecting the USB storage device, ensure that the TV is not in USB mode otherwise the USB storage device or the files stored in it may be damaged.
6. Please use only a USB storage device which is formatted in FAT16, FAT32, NTFS file system provided with the Windows operating system. In case of a storage device formatted as a different utility programme which is not supported by Windows, it may not be recognized.
7. When using a USB Hard Disk Drive which requires electric power source, ensure its power does not exceed 500mA. If the power of the USB hard Disk exceed 500mA, the TV system will be changed to standby mode, It must pull away the USB hard Disk and restart the TV system.
8. An **"Unsupported File"** message will be displayed if the file format is unsupported or corrupted.

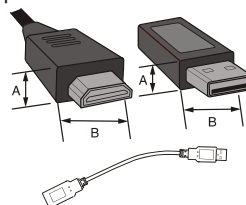
Caution

Use cable with the following maximum thickness for optimal connection to this TV, or it may damage your TV.

1. HDMI Cable not exceeding 10(A) x 20(B)mm
2. USB Cable not exceed by 7(A) x 18(B)mm

* Dimension of (A) should not be exceed 10mm.

In situation whereby the insertion of USB storage device is restricted, user may use the USB extension accessory provided.



USB File Playback Support

Supported Video File :

File Extension	Container	Video Codec	SPEC	Bit Rate	Profile
Mpeg	Mpeg2,4	Mpeg2,4	720P @ 30P	20Mbit/sec	Main Profile

Supported Music File:

Audio Codec	File Extension	Bit Rate	
MPEG1 Layer2	MP3(Optional)	32Kbps ~ 448Kbps(Bit rate)	32KHz ~ 48KHz(Sampling rate)
MPEG1 Layer3	MP3(Optional)	32Kbps ~ 320Kbps(Bit rate)	32KHz ~ 48KHz(Sampling rate)

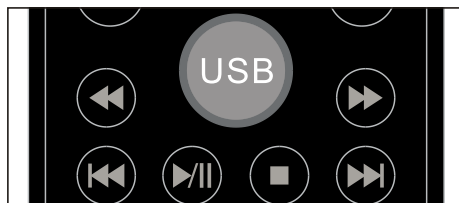
Supported Photo File:

Image	Photo	Resolution
JPEG	Base-line	15360x8640
	Progressive	1024x768
PNG	Non-interlace	9600x6400
	Interlace	1200x800
BMP		9600x6400

Supported Text Format : (*.txt) Encoding standard : Unicode

USB CONTROL

Remote Control



1.USB buttons

Press to enter USB menu.

2.Fast Backward buttons(◀◀)

Fast reverse while playback.

3.Fast Forward buttons(▶▶)

Fast forward while playback.

4.Previous buttons(◀◀)

Press to return to the previous chapter /track/photo. Skip to previous file.

5.Next buttons(▶▶)

Press to skip to the next chapter/track/photo. Skip to next file.

6.Play & Pause buttons(▶/||)

Press to pause music or movie play and press again to make play continue.

7.Stop buttons(■)

Press the stop button to exit full-screen playback, access to the preview.

USB Menu

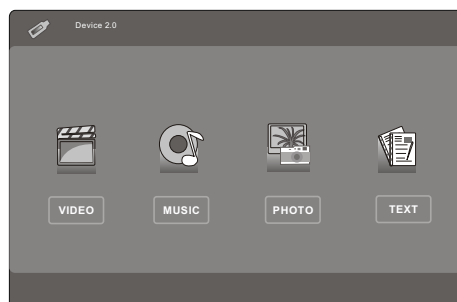
You can play video and music , view photo and text files from you USB storage devices.

1.Connect USB storage device to **USB1** or **USB2** input terminal.

2.Press **USB** button to enterUSB mode.

Note: Press onctime to enter to USB1 mode, and press second time to enter to USB2 mode.

3.Press [◀] / [▶] and] to select the types of USB modes: VIDEO, MUSIC, PHOTO and TEXT.



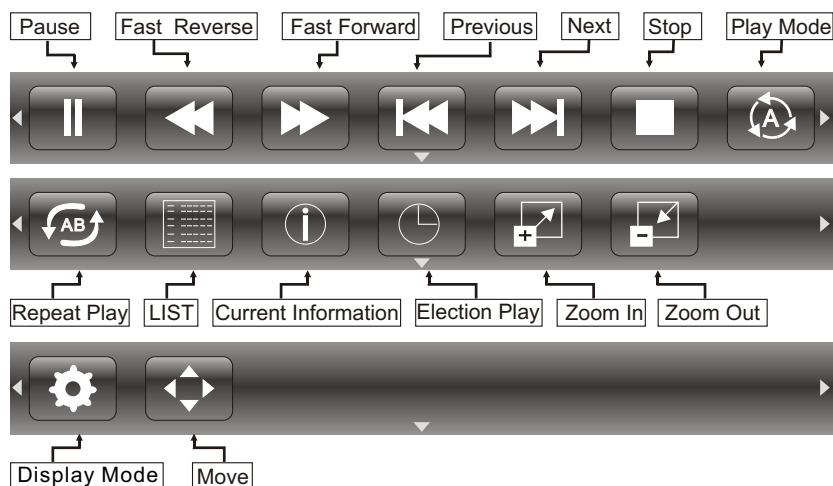
USB CONTROL

Video Menu

1. Press [◀] / [▶] to select VIDEO. Press [OK] to enter.
2. Press [◀] / [▶] to select the desired drive and press [OK] to enter.
3. Press [▲] / [▼] to select the desired folder and press [OK] to open the folder; select the desired video file using [OK] and press [▶/⏏] to start playing.
4. Press [■] to stop video playing and return to video list.
5. You may return to USB Player main menu by pressing [USB].



Video Control Bar



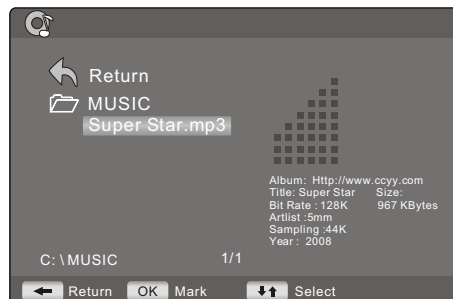
- Press [INFO] to display Video Control Bar while playing the video.
- Press [◀] / [▶] to select the desired settings.
- Press [▼] to exit from Info bar.

There are three modes of play mode. Press [OK] button to select Current Track (1), Repeat (AB), None (X) and All Tracks (A).

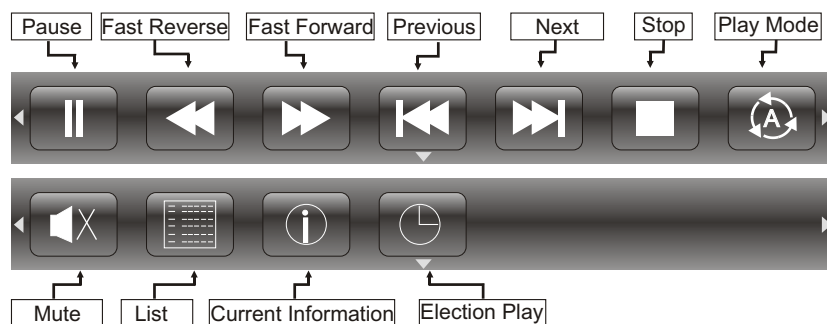
USB CONTROL

Music Menu

1. Press [◀] / [▶] to select MUSIC. Press [OK] to enter.
2. Press [◀] / [▶] to select the desired drive and press [OK] to enter.
3. Press [▲] / [▼] to select the desired folder and press [OK] to open the folder; select the desired music file using [OK] and press [▶/II] to start playing.
4. Press [■] to stop music and return to Music list.
5. You may return to USB Player main menu by pressing [USB].



Music Control Bar



- Press [INFO] to display Music Control Bar while playing the music.
- Press [◀] / [▶] to select the desired settings.
- Press [▼] to exit from Info bar.

Note:

- This menu only shows support files.
- Files with other file extensions are not displayed, even if they are saved on the same USB storage device.
- An over-modulated mp3 file may cause some sound distortion during playback.
- This TV supports lyrics display (English). Maximum number of characters per line is 48.
- The filename of music and lyrics must be the same in order to display lyrics while the music is playing.

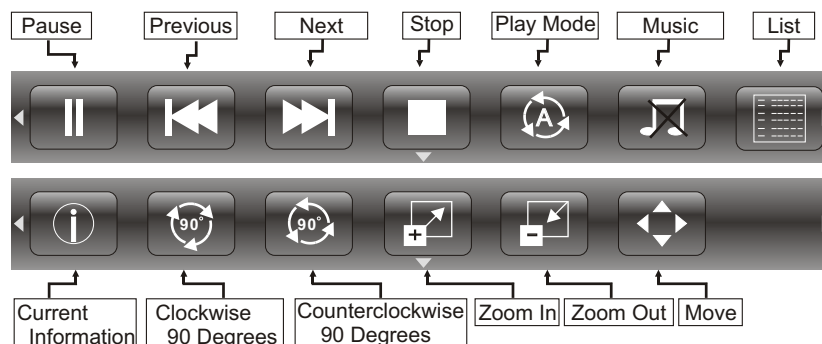
USB CONTROL

Photo Menu

1. Press [◀] / [▶] to select PHOTO. Press [OK] to enter.
2. Press [◀] / [▶] to select the desired drive and press [OK] to enter.
3. Press [▲] / [▼] to select the desired folder and press [OK] to open the folder; select the desired photo file using [OK] and press [▶/II] to start playing.
4. Press [■] to stop photo slide show and return to Photo list.
5. You may return to USB Player main menu by pressing [USB].



Photo Control Bar

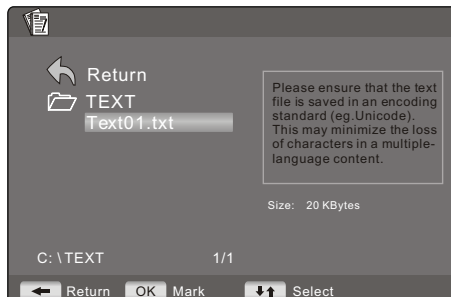


- Press [INFO] to display Photo Control Bar during photo slide show.
- Press [◀] / [▶] to select the desired settings.
- Press [▼] to exit from Info bar.

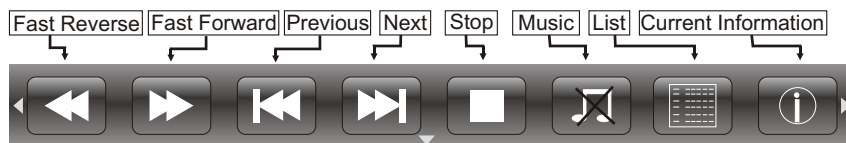
USB CONTROL

Text Menu

1. Press [◀] / [▶] to select TEXT. Press [OK] to enter.
2. Press [◀] / [▶] to select the desired drive and press [OK] to enter.
3. Press [▲] / [▼] to select the desired folder and press [OK] to open the folder; select the desired text file using [OK] and press [▶] to display the text document.
4. Press [◀◀] / [▶▶] to view previous or next text file.
5. Press [◀◀] / [▶▶] to select previous or next page in the text file.
6. Press [■] to return to Text list.
7. You may return to USB Player main menu by pressing [USB].



Text Control Bar



- Press [INFO] to display Text Control Bar while reading the text.
- Press [◀] / [▶] to select the desired settings.
- Press [▼] to exit from Info bar.

Note:

- It supports *.txt files.(English character)
- Please ensure that the text file is saved in an encoding standard. This may minimize the loss of characters in a multiple-language content.

TROUBLESHOOTING

NO PICTURE, NO SOUND

1. Check if the fuse or circuit breaker is working.
2. Plug another electrical device into the outlet to make sure it is working or turned on.
3. Power plug is bad contact with the outlet.
4. Check the signal source.

NO COLOR

1. Change the color system.
2. Adjust the saturation.
3. Try another channel. Black-white program may be received.

REMOTE CONTROL DOES NOT WORK

1. Change the batteries.
2. Batteries are not installed correctly.
3. Main power is not connected.

NO PICTURE, NORMAL SOUND

1. Adjust the brightness and contrast.
2. Broadcasting failure may happen.

NORMAL PICTURE, NO SOUND

1. Press the volume up button to increase volume.
2. Volume is set to mute, press MUTE to restore sound.
3. Change the sound system.
4. Broadcasting failure may happen.

UNORDERLY RIPPLES ON THE PICTURE

It is usually caused by local interference, such as cars, daylight lamps and hair driers. Adjust the antenna to minimize the interference.

BLANK SCREEN IN PC MODE

Perhaps the TV can not recognize the resolution set by the PC. Suggest to change to the best resolution or other standard resolutions of Windows system. Set refresh rate to be 60Hz.

SNOWY DOTS AND INTERFERENCE

If the antenna is located in the fringe area of a television signal where the signal is weak, the picture may be marred by dots. When the signal is extremely weak, it may be necessary to install a special antenna to improve the reception.

1. Adjust the position and orientation of the indoor/outdoor antenna.
2. Check the connection of antenna.
3. Fine tune the channel.
4. Try another channel. Broadcasting failure may happen.

IGNITION

Black spots or horizontal streaks appear, or the picture flutters or drifts. This is usually caused by interference from car ignition system, neon lamps, electric drills, or other electrical appliance.

GHOST

Ghosts are caused by the television signal following two paths. One is the direct path, the other is reflected from tall buildings, hills, or other objects. Changing the direction or position of the antenna may improve the reception.

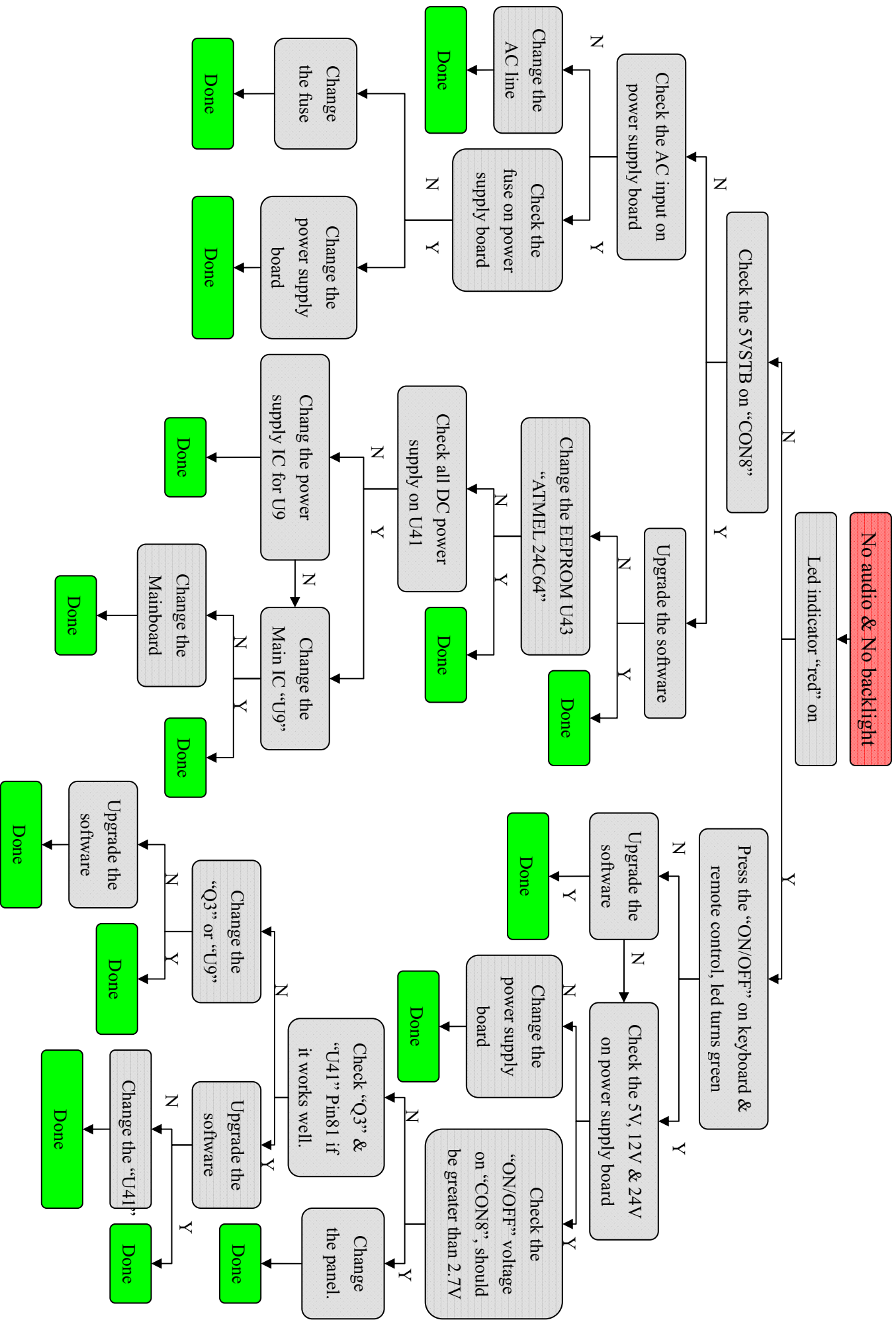
RADIO FREQUENCY INTERFERENCE

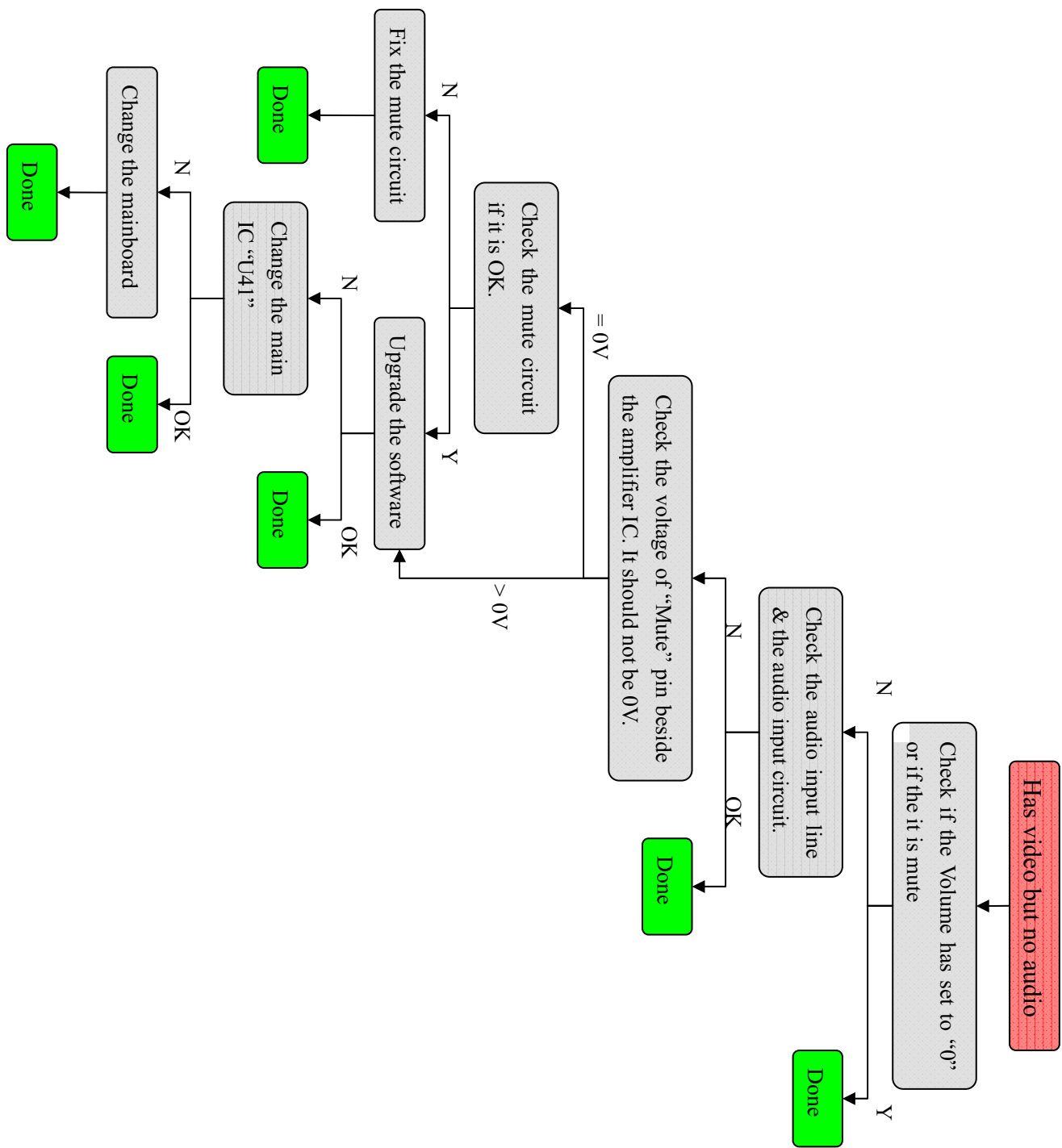
This interference produces moving ripples or diagonal streaks, and in some case, loss of contrast in the picture. Find out and remove the radio interference source.

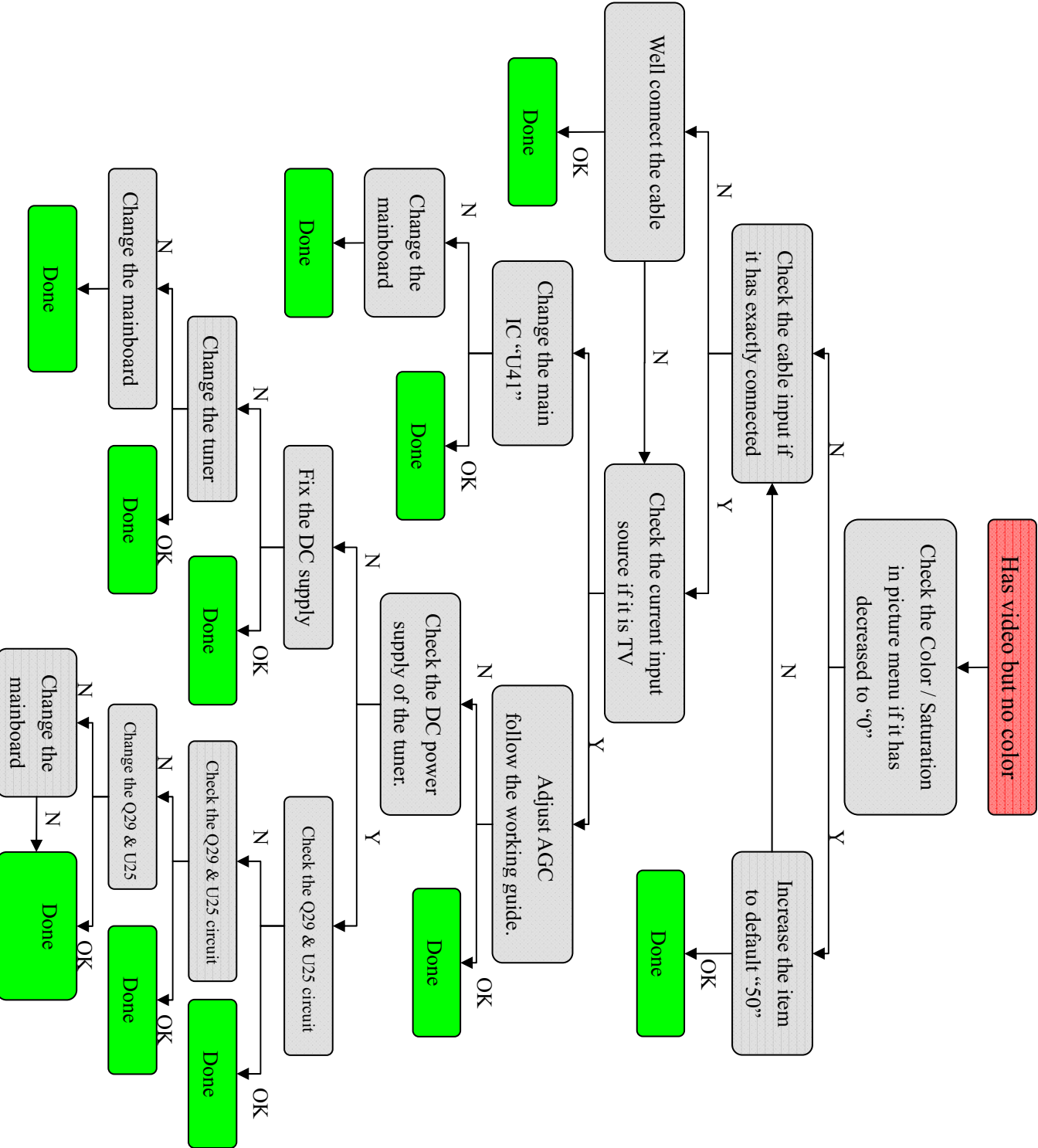
SPECIFICATIONS

Screen size - diagonal:	107cm
Screen resolution:	1920 X1080
Audio output power (L+R):	8W + 8W
Working voltage:	100-240V~ 50/60Hz
Rated power consumption:	120W
Dimensions (W x D x Hmm):	1010x240x660 mm
Net weight:	14Kg
Environment:	
Working temperature: 5°C~35°C	
Working humidity: 20%~80%	
Storage temperature: -15°C~45°C	
Storage humidity: 10%~90%	
Channel coverage: 470MHz Full-Channel Cable TV	
System:	
TV: PAL, SECAM, NTSC, BG/DK/I/M	
AV: PAL, SECAM, NTSC PLAYBACK	
Preset programs: 200 (1~200)	
Status displaying method: On screen display	
Function adjustment indicator: Menu display	
Language of OSD: Multiple options	
RF aerial input: 75 ohm unbalanced	
AV video input: 75 ohm, 1.0Vp-p, RCA	
AV audio input: 10k ohm, 0.5Vrms	

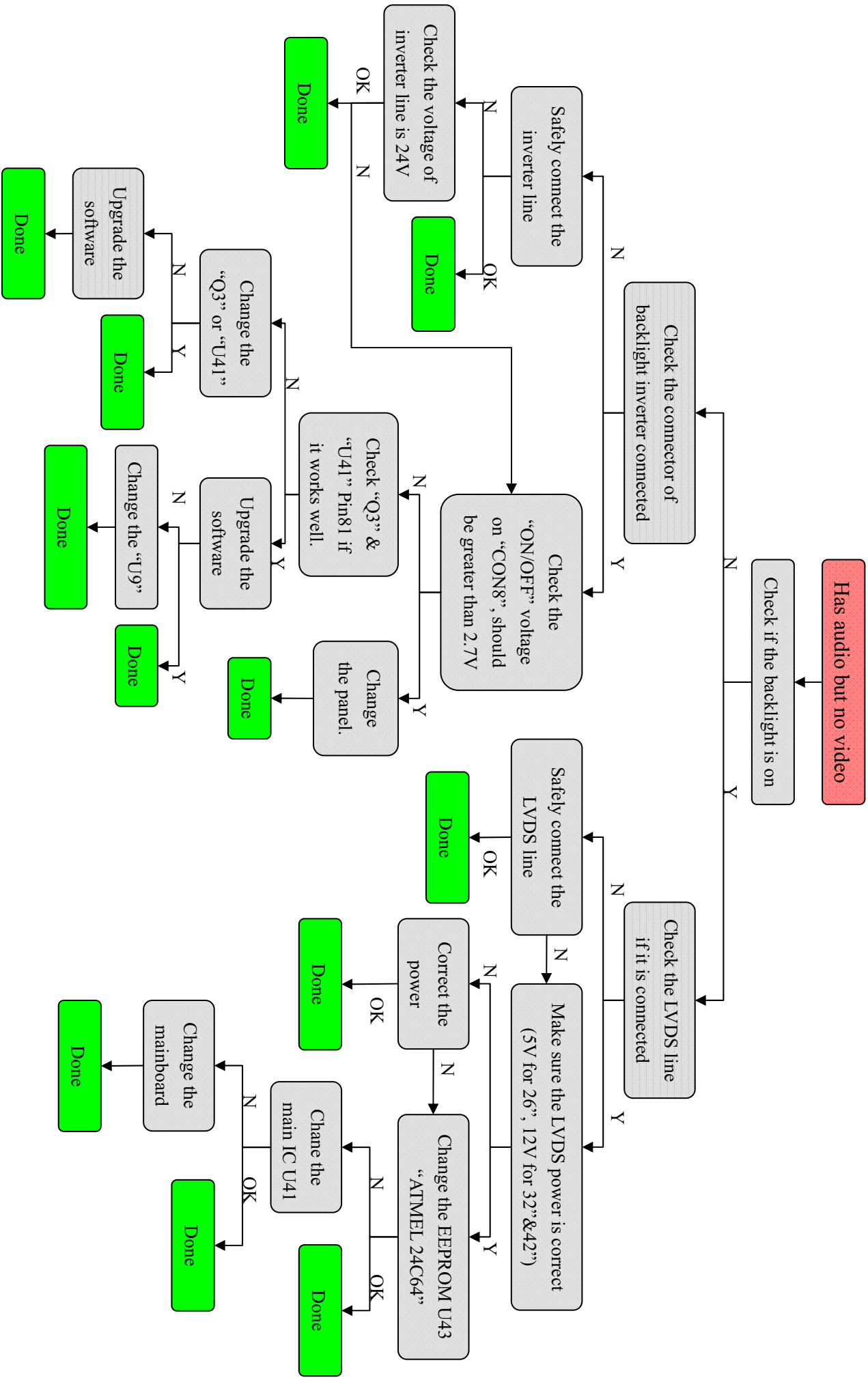
Service Flow Chart



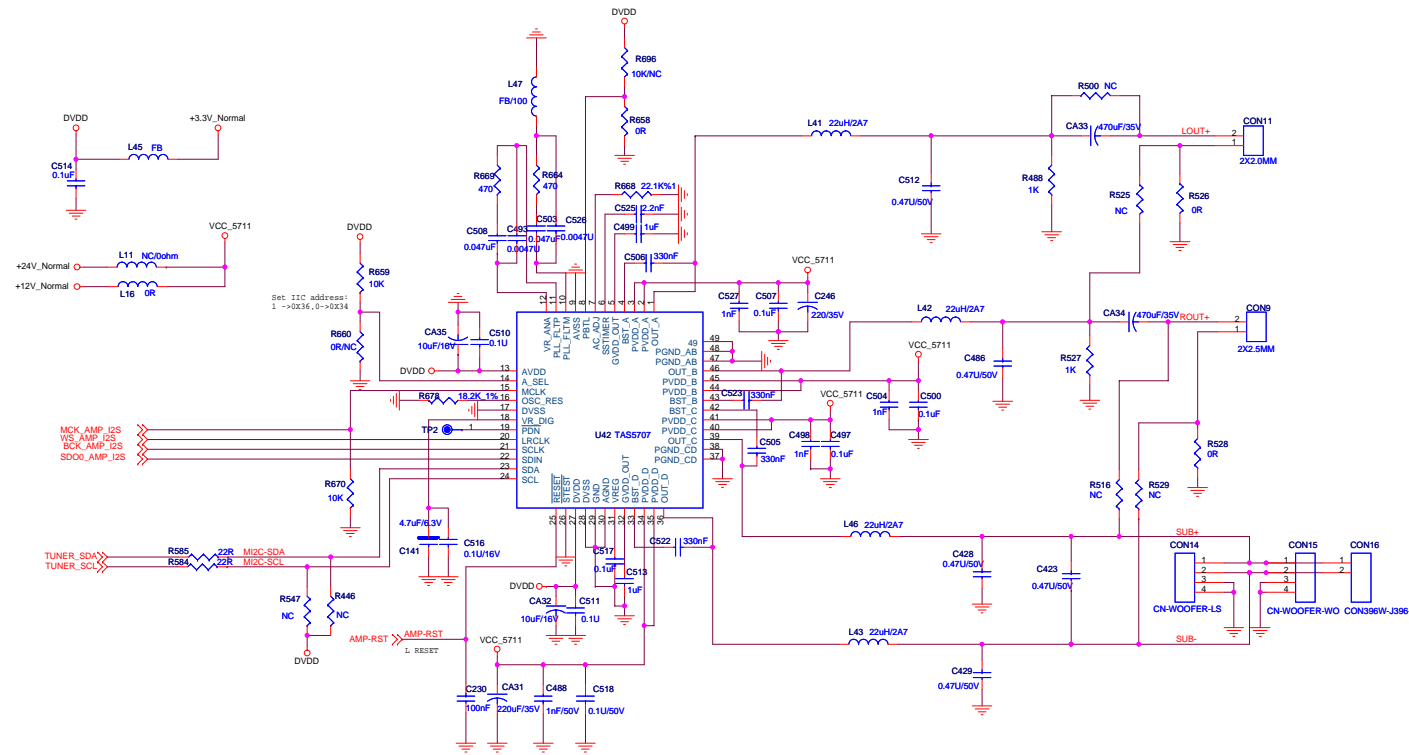
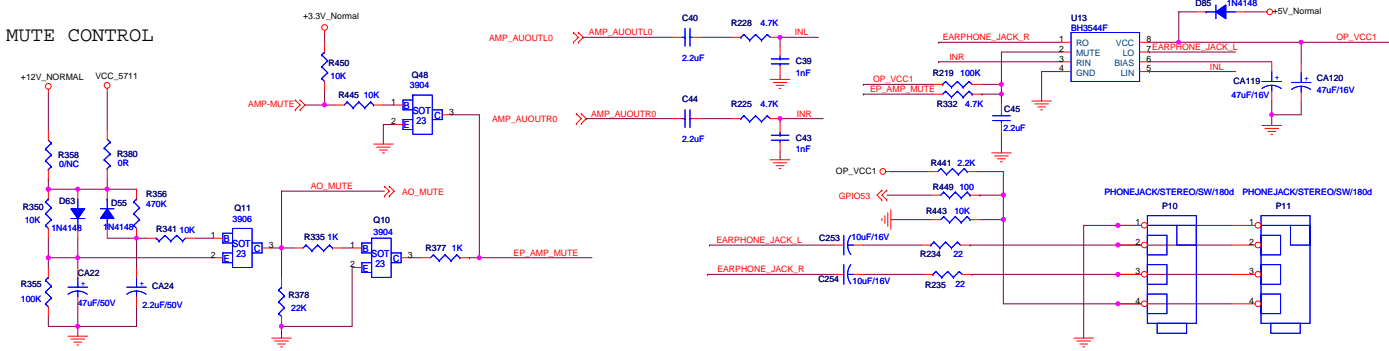


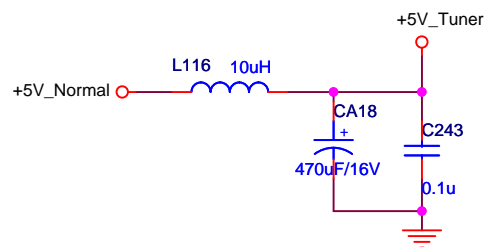
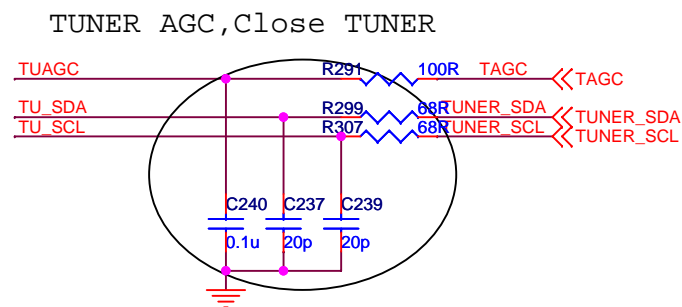
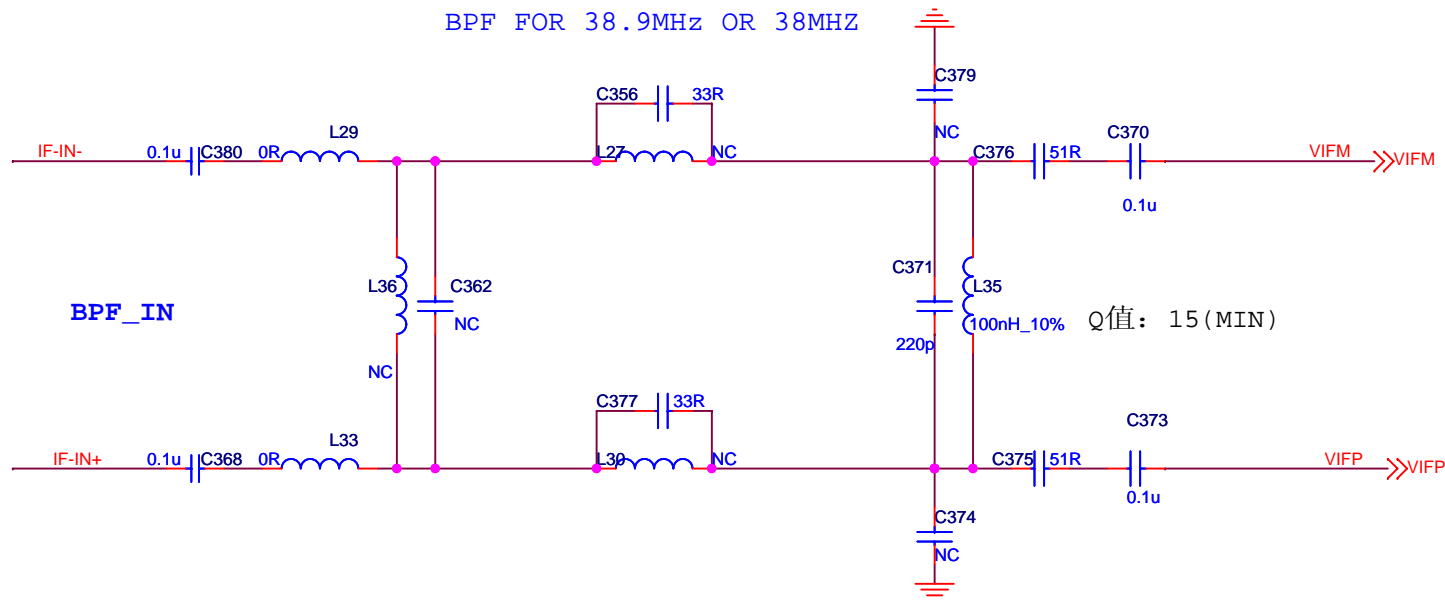
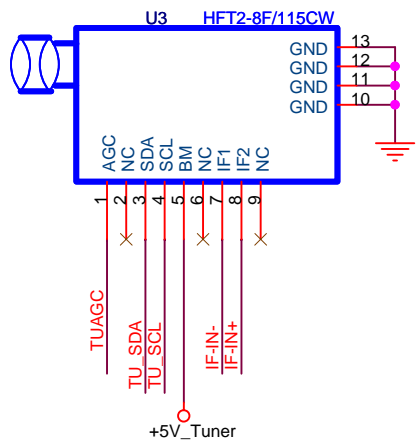


Service Flow Chart



MUTE CONTROL





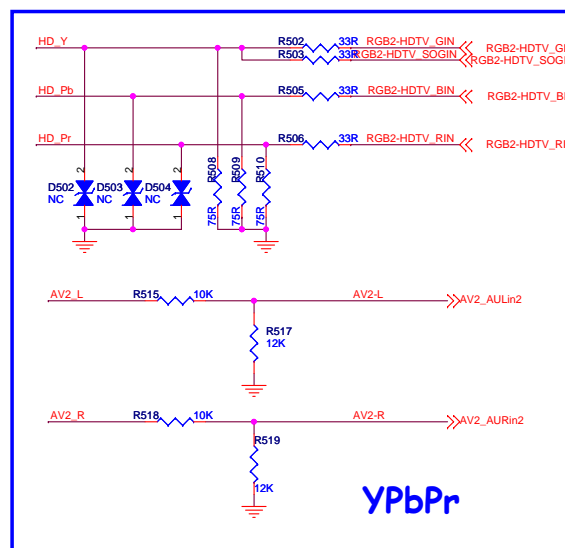
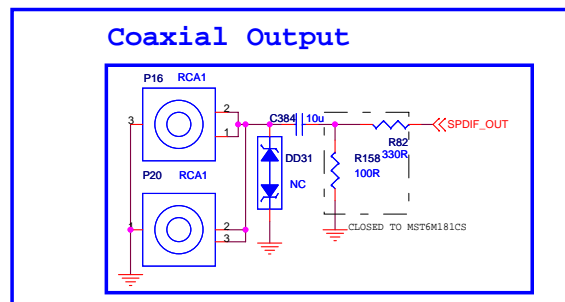
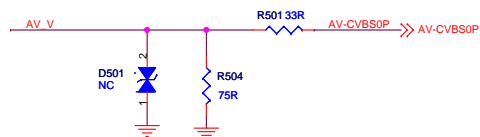
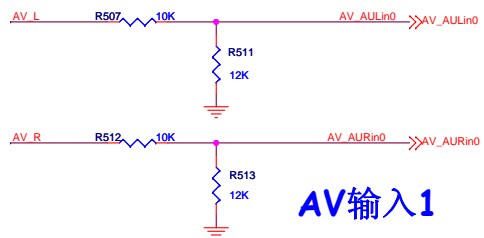
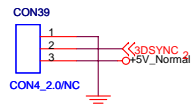
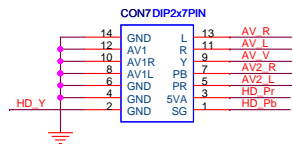



D

C

B

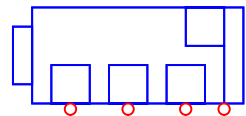
A



<OrgName> SMC 0755-26037700		
Title MST6M161LG&181VG&182VG		
Size B	Document Number MST6M161LG&181VG&182VG	rev V1.0
Date:	Tuesday, November 29, 2011	Sheet 2 of 10

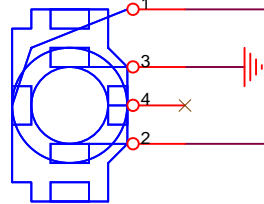
PHONEJACK STEREO SW 180d

6100-020100-0410

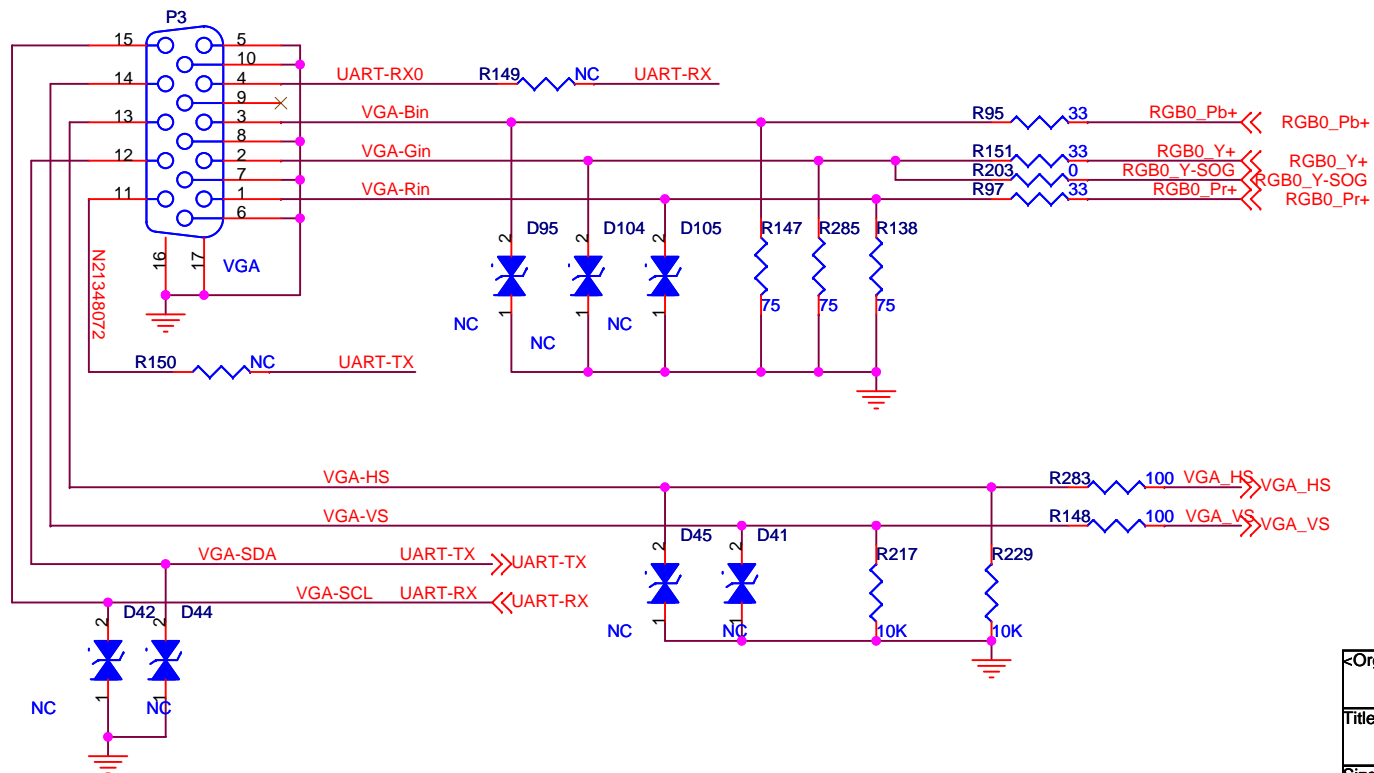



P5

P7
PHONEJACK



6100-020000-0410



<OrgName> SMC 0755-26037700		
Title MST6M161LG&181VG&182VG		
Size A4	Document Number MST6M161LG&181VG&182VG	Rev V1.0
Date: Thursday, January 12, 2012	Sheet 2	of 10

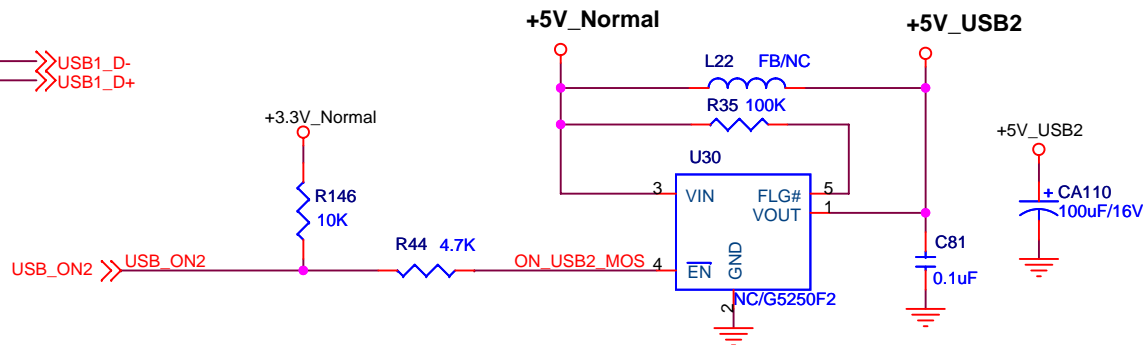
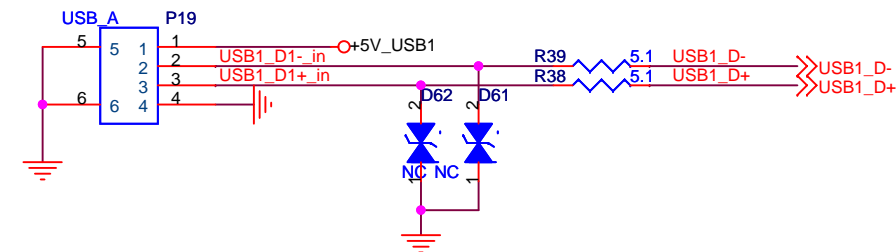
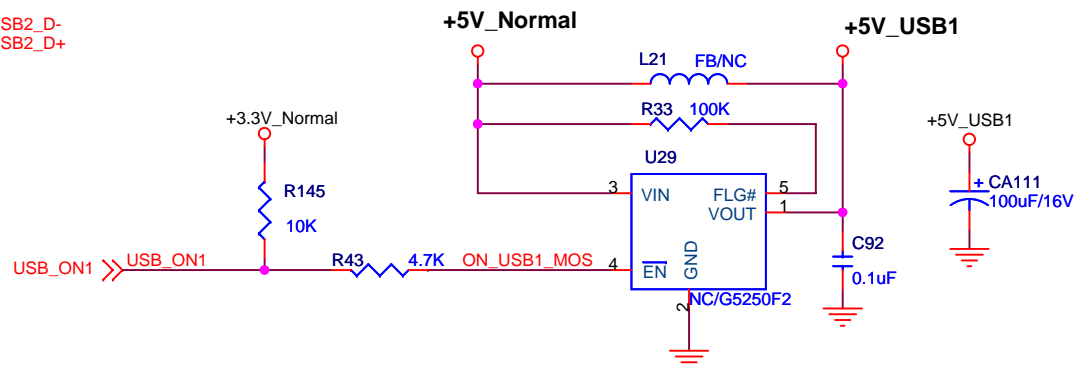
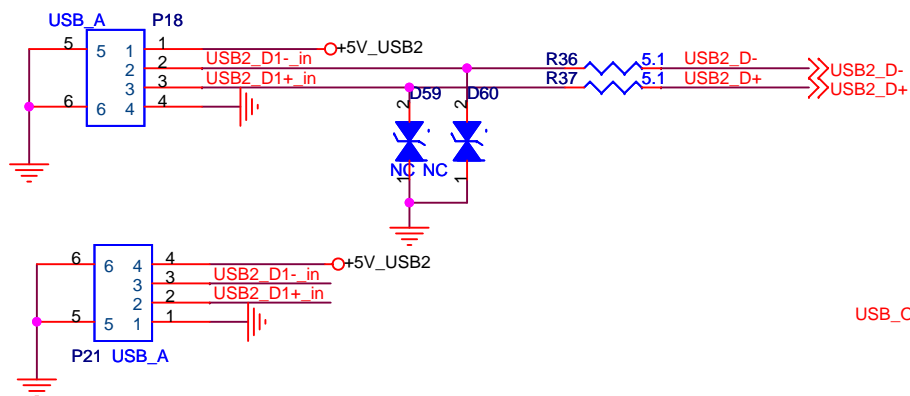


D

C

B

A

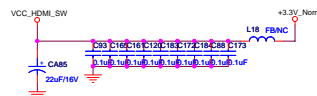
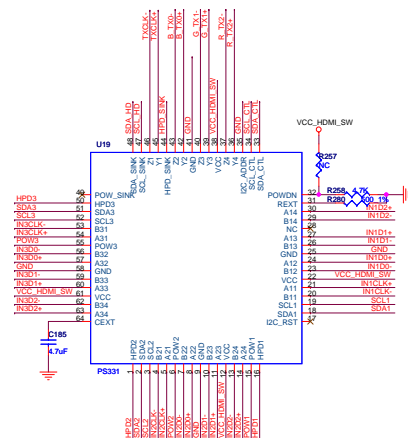
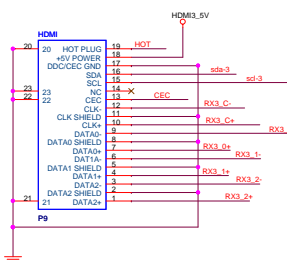




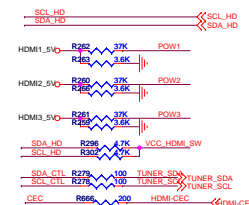
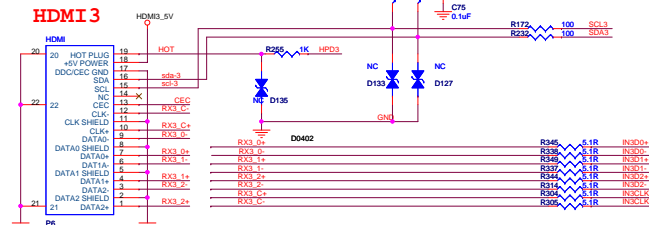
The schematic diagram illustrates the internal circuitry of the P1 module and its connection to the P2 module. The P1 module includes a USB connector (P1) with pins for GND, +5V, D+, D-, and CLK. It also features a USB-to-I2C bridge (D402), an I2C-to-SPI bridge (D403), and an SPI-to-IO bridge (D404). The P2 module is shown as a multi-pin connector with pins for power, ground, and data. The diagram shows the internal wiring connecting the P1 module's pins to the P2 module's pins.

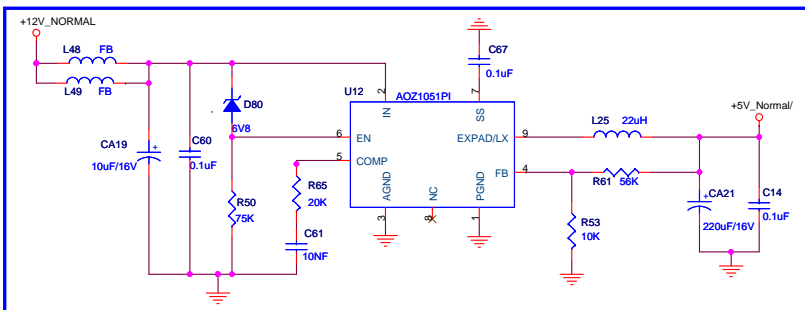
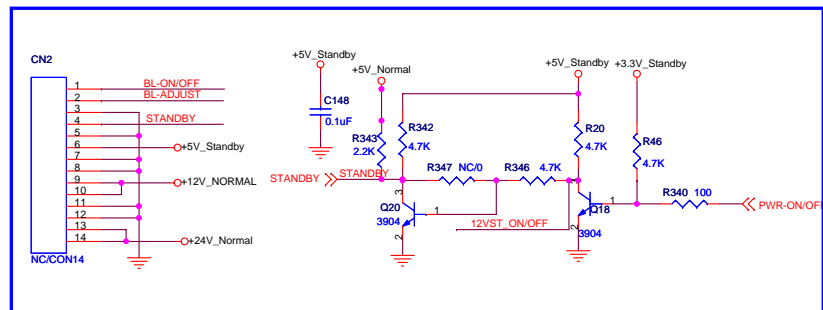
Pin Connections:

- P1 (USB Connector):**
 - 20: GND
 - 21: +5V
 - 22: D+
 - 23: D-
 - 18: GND
 - 17: D+
 - 16: D-
 - 15: CLK
 - 14: GND
 - 13: D+
 - 12: D-
 - 11: CLK
 - 10: GND
 - 9: D+
 - 8: D-
 - 7: CLK
 - 6: GND
 - 5: D+
 - 4: D-
 - 3: CLK
 - 2: GND
 - 1: D+
 - 0: D-
- P2 (Multi-pin Connector):**
 - 129: 5.1R IN1D0
 - 128: 5.1R IN1D0
 - 127: 5.1R IN1D0
 - 126: 5.1R IN1D0
 - 125: 5.1R IN1D0
 - 124: 5.1R IN1D0
 - 123: 5.1R IN1D0
 - 122: 5.1R IN1D0
 - 121: 5.1R IN1D0
 - 120: 5.1R IN1D0
 - 119: 5.1R IN1D0
 - 118: 5.1R IN1D0
 - 117: 5.1R IN1D0
 - 116: 5.1R IN1D0
 - 115: 5.1R IN1D0
 - 114: 5.1R IN1D0
 - 113: 5.1R IN1D0
 - 112: 5.1R IN1D0
 - 111: 5.1R IN1D0
 - 110: 5.1R IN1D0
 - 109: 5.1R IN1D0
 - 108: 5.1R IN1D0
 - 107: 5.1R IN1D0
 - 106: 5.1R IN1D0
 - 105: 5.1R IN1D0
 - 104: 5.1R IN1D0
 - 103: 5.1R IN1D0
 - 102: 5.1R IN1D0
 - 101: 5.1R IN1D0
 - 100: 5.1R IN1D0
 - 99: 5.1R IN1D0
 - 98: 5.1R IN1D0
 - 97: 5.1R IN1D0
 - 96: 5.1R IN1D0
 - 95: 5.1R IN1D0
 - 94: 5.1R IN1D0
 - 93: 5.1R IN1D0
 - 92: 5.1R IN1D0
 - 91: 5.1R IN1D0
 - 90: 5.1R IN1D0
 - 89: 5.1R IN1D0
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 - 15: 5.1R IN1D0
 - 14: 5.1R IN1D0
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 - 10: 5.1R IN1D0
 - 9: 5.1R IN1D0
 - 8: 5.1R IN1D0
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 - 6: 5.1R IN1D0
 - 5: 5.1R IN1D0
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 - 2: 5.1R IN1D0
 - 1: 5.1R IN1D0

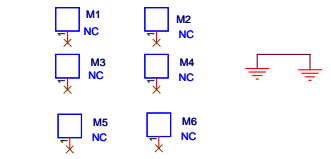
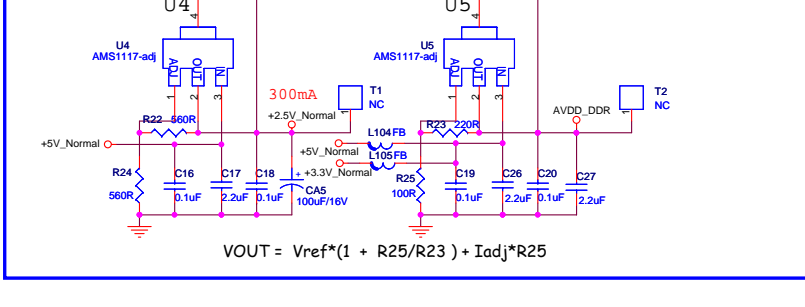
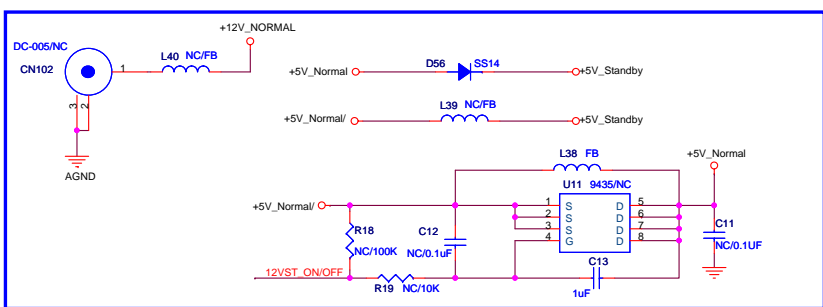
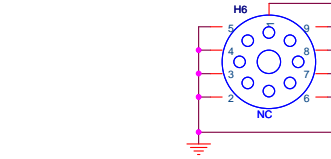
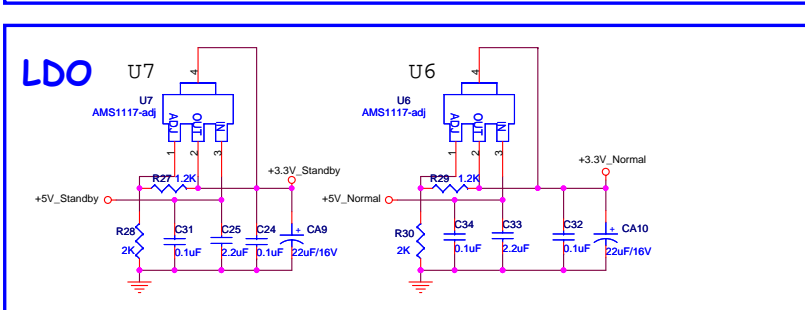
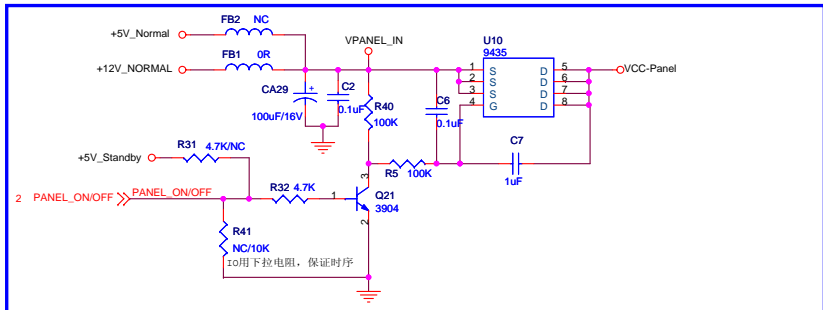
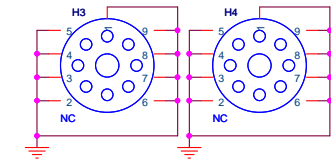
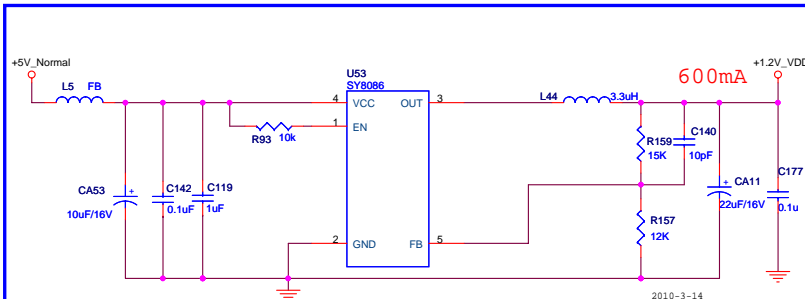
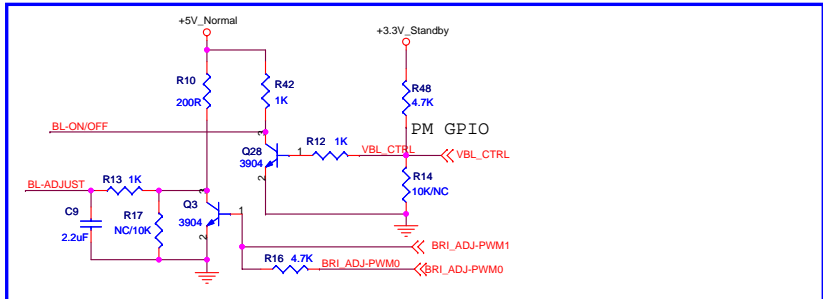
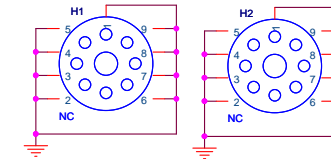
[illegible]

B_TX0	HDMI2-RX0P	SDA_HD	R251	ORVNC	SDA2
B_TX0	HDMI2-RX0N	SCL_HD	R249	ORVNC	SDA2
G_TX1	HDMI2-RX1P	HPD_TX0P	R250	ORVNC	HPD2
G_TX1	HDMI2-RX1N	HDMI2-RX2P	R251	ORVNC	HPD2
R_TX2	HDMI2-RX2P	HDMI2-RX2N	R251	ORVNC	HPD2
R_TX2	HDMI2-RX2N	HDMI2-RX3P	R251	ORVNC	HPD2
TXCLKA	HDMI2-CLKP	HDMI2-RX3N	R251	ORVNC	HPD2
TXCLKB	HDMI2-CLKN	HDMI2-CLKP	R251	ORVNC	HPD2
		HDMI2-CLKN	R251	ORVNC	HPD2





定位孔



备注:

1: U5是为DDR提供电源,MST6M182V6内包DDR2,输出为1.8V.

-OrgName-		SMC 0755-26037700		SMC 芯智	
Title		MST6M161LG&181VG&182VG		SMD61-CORE Technology	
Size	Document Number	MST6M161LG&181VG&182VG		Rev	V1.0
Date:	Friday, February 03, 2012	Sheet	2	of	10

20110826

更改的部分:

1.PAGE 08_AUDIO AMP

更改部分, 增加R926(470R)、R927(470R)。
目的为了解决开战频底噪问题。

20110901

1.PAGE 02_MST6M161LG

AMS1117_adj 的1脚反馈电压 是 相对2脚OUT的, 即2脚
和1脚的相对电压为1.25V, 所以将R23改为220R, 将R25改为100R